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Extension: Catalyst for Change: 1971 Report

Cooperative Extension Service
South Dakota State University

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EXTENSION

catalyst for change

1971

Report
South Dakota
Cooperative
Extension
Service

Extension Special Series No. 18

EXTENSION: catalyst for change

1971
Report
South Dakota
Cooperative
Extension
Service

From the Director:



America's founding fathers believed that educated, responsible, informed citizens, working in a free society for themselves, their community and their nation, were the foundation of democracy.

The Cooperative Extension Service, which helps to continue this great tradition, is a unique achievement in American education—Extension has become an agency for change—a catalyst for individual and group action. The idea of Cooperative Extension education grew as a partnership of local people, the state and land grant universities. All share in planning and financing Extension programs. This is the basis for the name "Cooperative Extension Service."

Extension's job is informal, continuing education to help people help themselves. For example, agricultural and other areas which involve Extension educational programs contribute to the creation of three-fourths of the state's income. Four-H youth programs help prepare our boys and girls

for a productive life by teaching them to work, achieve and cooperate with others. Many educational programs, planned and carried out with homemakers, have produced richer community and family life experiences for the people of this state.

Extension transmits practical information on many subjects from the findings of the Agricultural Experiment Station at South Dakota State University and from other research centers and universities to the public. It presents unbiased facts to help people identify problems and use new technology in solving them—to help them make their own decisions and organize to act on those decisions.

Extension programs follow the guidelines of national objectives, but permit a wide latitude in adapting them to local needs. State and national goals are balanced against local requirements. The subject matter of Extension's educational programs are constantly changing and differ from county to county each year. This occurs because Cooperative Extension programs are planned annually at the "grass roots level," not by the Extension staff alone, but by many local groups in the county. Finally, the programs are approved by a local Extension board, appointed by elected commissioners of the respective counties.

The Cooperative Extension Service is proud of the accomplishments of the people of South Da-

kota for whom it has served the last 56 years as partners in progress.

The education programs of Extension through the years have changed to meet needs. As we look to the years ahead, we can expect new opportunities and new problems to be solved.

Overall, we could expect stepped-up educational efforts toward a positive impact on the economic and social development and improvement of rural America and the improvement of the individual quality of living. In many cases, realization of these goals will not come easily. Agriculture will have to find ways to strengthen its position in the marketplace which is becoming increasingly urban dominated. Rural communities are confronted with new and pressing problems caused by out-migration and a lack of off-farm employment opportunities. The undernourished among us, due to inadequate diets, pose still another problem. So does the pollution of our environment.

The Cooperative Extension Service is dedicated to serve the people of South Dakota in meeting these challenges.

John T. Stone
Dean of Extension

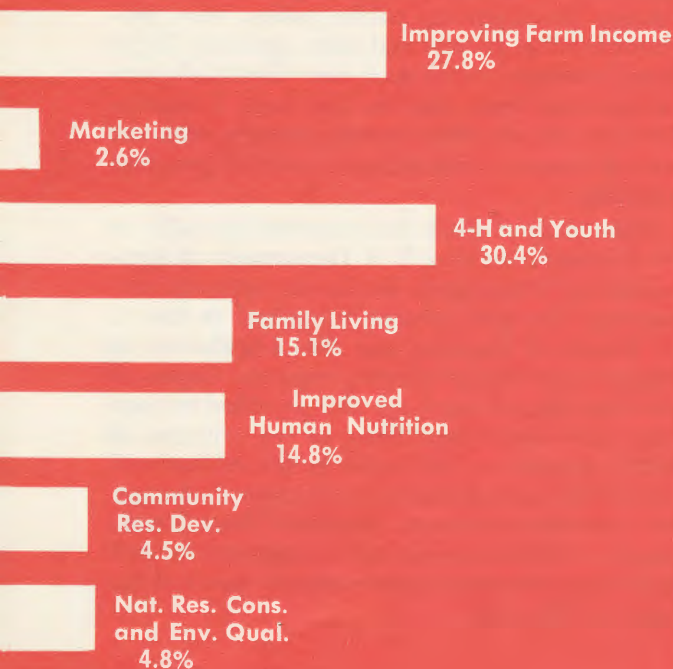
S. D. Extension Service 1970-71 Funding

Federal Funds 45.62%
\$1,562,828

State Funds 42.35%
\$1,450,800

County and Private Funds 12.03%
\$412,212

Per cent of Total Extension Time Spent on Various Areas of Work



south dakota extension service

The S. D. Extension Service in agriculture, home economics and 4-H was created by Congress in 1914 through the Smith-Lever Act. This act provided federal funds to be matched by state sources for the purpose of "... disseminating useful and practical information in the broad fields of agriculture and home economics to the people of the United States."

The S. D. Legislature in 1915 approved the establishment of the Extension Service as provided by the Smith-Lever Act of 1914 and authorized boards of county commissioners to conduct Extension work in cooperation with South Dakota State University. This has continued to the present.

In 1970-71, the S. D. Extension Service budget was \$3,425,840 and the funds were from these sources: 45.62% Federal Congress appropriations, 42.35% State Legislature appropriations, and 12.03% appropriations by county commissioners and private funding.

This statewide educational service has 67 field offices serving every county and they are staffed by county agricultural agents and county home economics agents. They are backed up by Extension specialists based on the SDSU campus with research workers and teachers in their respective fields.

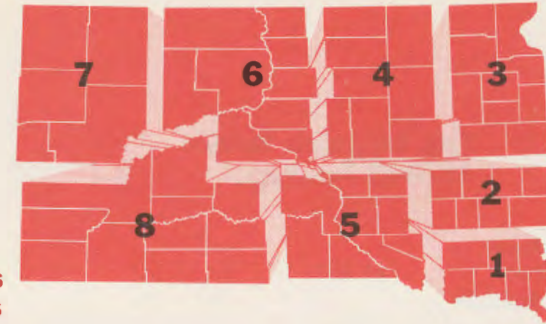
County Extension boards, appointed by county commissioners, and advisory boards of agricultural, home economics and youth leaders, cooperate with Extension in program planning and its functions.

During the last year, intensive educational programs were conducted on:

- All phases of agricultural production.
- Farm and ranch business management.
- Marketing.
- Natural resource conservation and development with emphasis on water and soils.
- Public policy and economic understanding.
- Farm and home ranch building and construction.
- Home management and finances.
- Consumer protection.
- Pollution control.
- Care of public housing.
- Home improvement and landscaping.
- Family nutrition.
- Family human relations.
- Clothing.
- Youth development through 4-H and other youth programs.
- Community resources development.
- Transportation.
- Wildlife conservation.
- Tax problems.
- Business management.

WHY extension is a catalyst

South Dakota Extension Board Areas and County Staff Locations



Cooperative Extension Service educational programs are successful because they involve local people in the planning and development. The following chart shows how programs are planned by cooperating county groups and organizations:

Either the executive committee or appointed

program planning committees of each of the above five major program areas meet jointly with the County Extension staff to establish short range (one-year) and long range (four- to five-year) educational goals, identifying priorities in their areas of interest. These groups often call in state

Extension specialists and personnel of other agencies who serve as advisors to the group. Each of the groups present recommendations for programs to the county Extension board which establishes the priorities for the total county Extension program each year.

These priorities are documented in an annual plan of work, approved by the county Extension board and submitted to the State Extension Service for joint approval. District Extension supervisors provide counseling assistance to county staff and county Extension boards in establishing program priorities.

County Extension boards meet jointly twice a year by areas of the state (see map) to review and suggest educational programs of multi-county or statewide concern (for example: Water resources development, public policy, new programs of other federal and state agencies). Eight area Extension boards each elect three delegates to represent their area on the State Extension Advisory Board, which meets annually with the state Extension administrative staff for program planning.

State plans of work are submitted annually to the Extension Service, U. S. Department of Agriculture in Washington, D. C., for approval and funding. The plan also is submitted to the S. D. Board of Regents and the Legislature to support state budget sharing requests. Copies of the state plan of work are also provided to each dean and department head of the colleges at SDSU to make a full circle in the educational cycle. This communication continuum is designed to provide maximum "feedback" from beneficiaries of Extension education programs as well as to draw attention to new research needs of the people of this state.

- *Rural Development Planning Committees
- *Farm Organizations
- *Water Resources Committees
- *Watershed Districts
- *Resources Conservation and Development Committees
- *Other Interested Persons

- *Livestock Improvement Associations
- *Dairy Herd Improvement Association
- *Breed Associations
- *Marketing Associations
- *Livestock Associations
- *Poultry Improvement Associations
- *Other interested persons

- *County Councils
- *County Nurse
- *Interested Persons

COUNTY EXTENSION BOARD COUNTY EXTENSION PROGRAM COUNTY EXTENSION BOARD

- *4-H Leaders' Association
- *4-H Members' Council
- *Social Service Organizations
- *Agricultural Organizations
- *Others Interested in Youth

- *Crop Improvement Associations
- *Agricultural Stabilization and Conservation Committees
- *Soil and Water Conservation Districts
- *Weed Boards
- *Other Interested Persons

catalyst for economic growth



An additional \$100 million could be added to the state's economy if farmers, ranchers, business firms and other individuals applied known profit-making or cost-saving techniques in economic development, credit management, inventory control, cash management and other economic practices outlined by Extension economists. The state can use this economic "shot in the arm" and it appears as if the services of Extension economists will be increasingly relied on in the future to help individuals and firms adjust to and remain competitive in an economic system that is in a continual state of change.

Rural Community Development

The S. D. Extension Service was involved in some manner in at least 100 community development projects this year. If only 56 of the new separately identifiable projects in this group were completed, it would mean an added capital investment of at least \$15.5 million, 657 new jobs

and additional \$2.4 million to payrolls. And in addition, 44 projects, begun in previous years, were either completed or in progress.

The S. D. Extension Service conducted a 10-week community leadership training seminar for participants from a five-county area in western South Dakota. Participants dealt with broad and specific issues and problems, including: Revision of the state constitution, apathy and resistance to change, taxation, social action, industrial development, education, communication and multi-county cooperation. Since the seminars were initiated in South Dakota four years ago, 300 community leaders from 42 counties have participated.

A four-session seminar was held for 10 eastern South Dakota counties, a follow-up for initial seminars launched four years ago. The most recent sessions—reflecting current activities planned or underway in northeastern South Dakota—dealt with industrial and rural development, education, tourist and recreation promotional activities and a model multi-county rural development project.





public concern. Various sides of the tax question were presented in five programs seen in 33 counties over the state's educational television network. Each of the programs dealt with a specific aspect of public finance and taxation.

Resource persons from the Economics Department of SDSU, state and local governments were called on to help discuss the tax issues and problems. The final program was devoted to a panel discussion in which questions from the viewing audience were discussed. A series of four Extension leaflets containing tax needs and expenditures, revenue sources, and other general aspects of taxation and spending were available to viewers on request. Over 7,500 viewers contacted county Extension offices to receive these leaflets.

Other educational efforts on taxes included six radio programs recapping the television series, 16 public meetings and individual requests for specific information on tax questions.

Agricultural Policy Activities

Extension, with the help of ASCS officials, reached more than a third of the farm operators in South Dakota with information explaining the new 1971 programs for wheat and feed grains. A half-hour educational television show and 250 county meetings were held.

Another 4,700 persons were provided data on U. S. agricultural exports, imports and foreign trade. South Dakota has a heavy stake in foreign trade, because this country's major agricultural exports are wheat, feed grains and soybeans.

A series of five films, used on educational television and at meetings, plus a series of six leaflets on national agricultural policy, acquainted producers and agri-business men with the factors influencing agricultural policy. These materials were also used in conjunction with campus courses in agricultural policy and marketing.

Resources of the S. D. Extension Service are used and appreciated in just about every level of agri-business, industry and commerce. Extension specialists and county agents have shown communities how to secure federal funds for such things as low-rental housing projects, outdoor recreation, water and sewer development, irrigation systems, hospital and ambulance facilities and training programs to help the unemployed.

Economic Data Helpful for Community Development

The S. D. Extension Service has provided basic economic and demographic data to help

community leaders make long range plans for desirable types of development. For example, sensible planning for schools and churches requires reliable predictions as to the number of young persons likely to be residing in an area 10 or 20 years from now. Extension has presented community leaders with information on number and size of farms, population by age groupings, retail sales data, numbers of employed persons and other vital statistics.

Taxation and Revenue Problems

South Dakotans were provided information needed to make fair decisions on taxation in a year when local and state tax reform was of utmost

Management Aid for Cooperatives

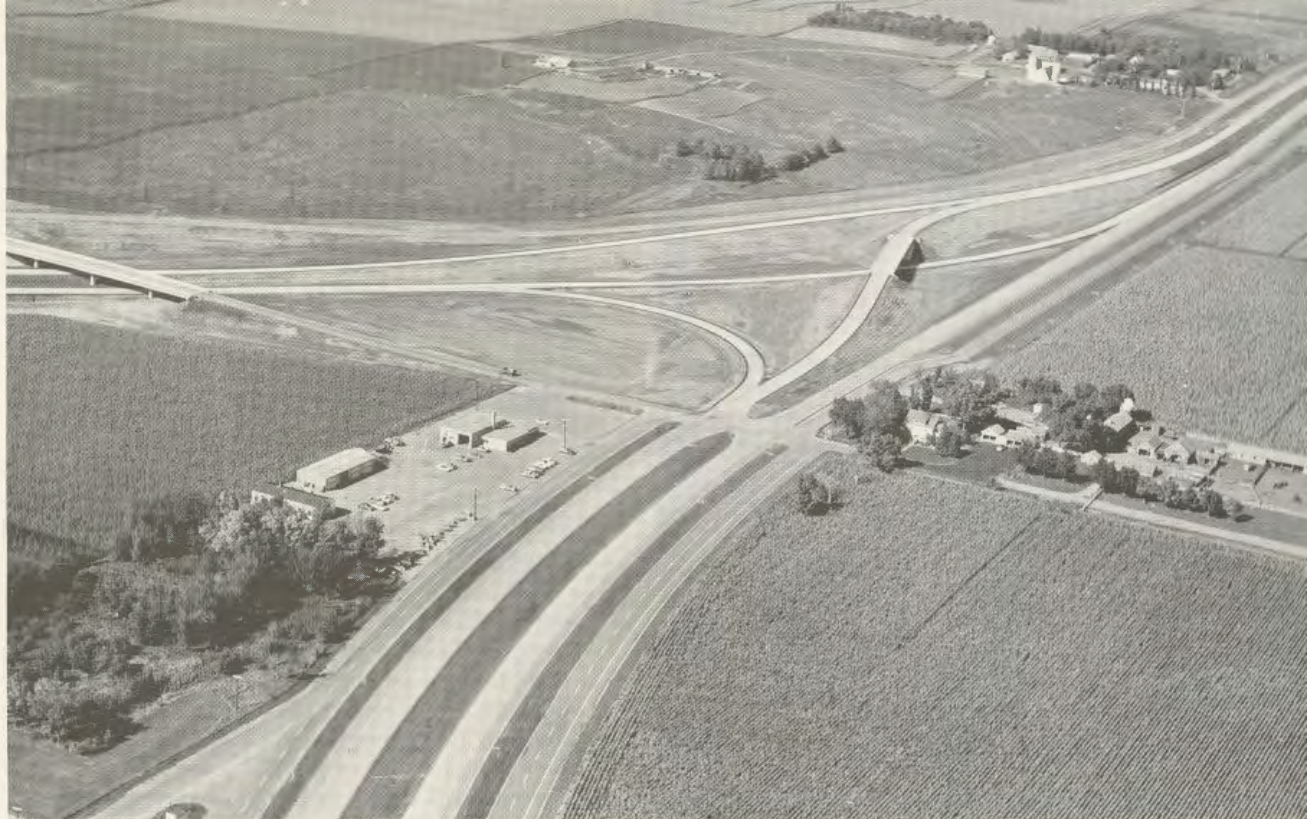
Extension has responded to requests from cooperative firms for workshops for their managers and directors. Schools, provided by Extension, have helped improve employee efficiencies and reduce employee turnover. They were held in cooperation with the S. D. Association of Cooperatives and the Omaha Bank for Cooperatives. The result has been a combined net increase in earnings for 171 firms of \$2 million annually to the S. D. economy.

Nearly 150 managers and directors participated in workshop sessions aimed at improving communications inside and outside their respective organizations. A follow-up survey indicates that future workshops will continue to emphasize improved communications.

High priority requests are for workshops on:

- Future trends in farms and cooperatives.
- Financing and credit.
- Methods of getting the younger generation involved in the cooperative.
- Manager-director relations and responsibilities.
- Employee training and evaluation.
- Bargaining power for cooperatives.
- Planning and control within the business.
- Capital requirements and retirement of equities.
- Managing for profits.
- Cooperative principles and their current application.

The combined incomes of the more than 4,000 persons employed by local marketing and farm supply cooperatives in South Dakota add up to more than \$24 million per year. Operating expenses for wages, utilities, property taxes, truck expenses and other items totaled more than \$58 million this year. Most of these expenditures and savings are spent initially in the local community. Applying an estimated income multiplier of 2.5, this represents approximately \$180 million annually.



Tackling Transportation Problems

South Dakota could literally become an isolated island if it lost its major sources of mass transportation. The Extension Service is very concerned with future transportation developments, because South Dakota produces and exports raw materials and thus very vitally needs transportation. Transportation problems are being worked on cooperatively by South Dakota and a number of other states. A direct liaison has been established between SDSU and many transportation companies, particularly railroads, to determine how some of the problems might be solved. Much work remains to be done.

Grain Marketing and Farm Supply Assistance

Grain elevator managers and operators in recent years have become aware of the profit potential for grain hedging, thus they've asked Extension for help to better understand and put into practice this method of grain marketing.

Economists feel that had but 10 cents a bushel of the potential 14.5 cents a bushel hedging opportunities been realized from 1963 to 1970 on just 20 per cent of South Dakota's corn production, profits would have been about \$17.5 million more. In addition, there would have been price protection.



Extension economists also estimate that savings to producers could be \$19 million annually if known profit-making or cost-saving techniques in credit management, inventory control, cash management and assessment of margins and pricing were employed by S. D. farm supply firms. They'd probably be as much as \$28 million annually by 1980.

Mergers and Consolidations of Farm Supply Firms

Technological changes in transportation and agriculture are forcing many elevator-farm supply firms to look at the feasibility of merging and consolidation for survival.

Extension economists received requests for assistance from 16 different groups involving 31 individual firms this year. Extremely competitive conditions exist between elevator-farm supply firms and the decision of whether or not to merge depends on a complex range of economic factors. As the number of requests for assistance grew, it became imperative that a faster system of analyzing business firm records and the competitive conditions in each of the merging firm's trade area was needed. **Extension economists, with the aid of a graduate student and a computer, developed a flexible economic model that requires less than half the time formerly required to make an analysis.** They predict that the model will be utilized in other states in conducting feasibility studies.

Assistance was provided to six groups of firms involving 17 individual businesses with cost-income analysis data, advantages and disadvantages of unification as well as outlining methods and procedures for merging and consolidating.

Dairy Marketing Assistance

The board of directors of Mountain Milk Inc., a 4-year-old federated cooperative of dairy cooperatives from western South Dakota, Colorado, Utah, Arizona and New Mexico, called on the Extension Services from each state to help them study their market inputs and outputs and to suggest alternatives.

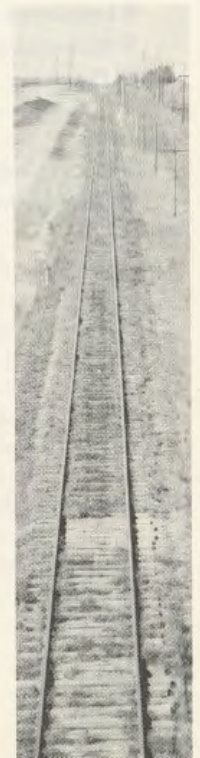
The dairy firms involved wanted to gain the highest possible prices for their patrons and to expand fluid milk outlets.

Extension conducted a two-part study describing Mountain Milk's internal structure and operations and evaluated its potential market.

As a result of this study, the federated cooperative is working out details to coordinate and direct the flow of milk within the inter-mountain area. The demand for milk in the five states represented by Mountain Milk Inc. is expected to increase 44.6% by 1980. At today's prices, this represents an additional \$56.8 million income for the 2,754 producers by the end of this decade.

New Agri-Business Firm Established

Dewey County farmers have long needed the services of a seed processing and marketing facility where they could obtain quality seed at reasonable prices. Thanks to the coordinated efforts



of the Dewey County Extension agent and the Dewey County Crop Improvement Association, they now have such a facility. Before the new plant was established, producers were hauling seed 140 miles to be cleaned.

In the first year of operation over 100,000 pounds of rough alfalfa seed were cleaned and about 6,300 pounds of Oahe intermediate and crested wheatgrass seed were processed. More than 2,500 bushels of certified grain seed for planting were handled.

Other Marketing Educational Activities

County Extension agents assisted 1,069 farmers and ranchers in the use of futures contracts and other contractual agreements in the marketing of crops and livestock. They provided information and help to 3,266 producers and marketing firms in the purchasing, processing, selling or transportation of agricultural products. In addition, 194 feed firms, 258 fertilizer firms, 186 seed dealers and distributors, 401 chemical handlers and suppliers and 44 rural electric associations received technical production and marketing information.

Agents provided information on the principles, concepts and influences of bargaining power on agricultural prices to over 2,400 producers, homemakers and community leaders. Information on market structural changes and how these changes affect the pricing and marketing of agricultural products was provided 1,974 producer and business leaders. The cooperative approach to marketing was explained to over 2,000 farmers, ranchers and businessmen. Transportation and its influence on the marketing and pricing of agricultural products and supplies was provided 1,052 community leaders. Home economics agents provided information about food prices and pricing to 4,263 homemakers and consumers.

Interpreting Market Outlook

Farmers and ranchers were provided market outlook and price information that would assist them in making marketing decisions.

More than 300 ranchers attended a series of six feeder cattle marketing and management meetings in western South Dakota last fall. Extension farm marketing specialists analyzed feeder cattle market price trends for the fall, winter and spring months, based on an evaluation of beef cattle numbers, feed and roughage supplies, cattle feeding trends and general economic conditions.

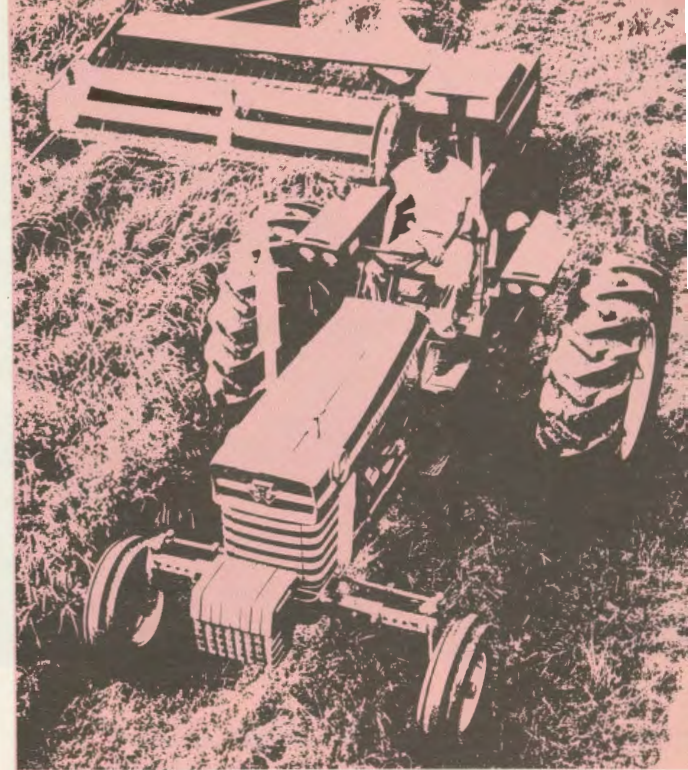
A series of 12 cattle feeding and livestock outlook meetings was conducted in eastern South Dakota for almost 900 producers. An Extension economist illustrated how to estimate payable prices for feeder cattle and how to examine the alternative of wintering feeder calves for spring sale (backgrounding) instead of finishing the animals for fall sale. More than 4,000 copies of an eight-page "Cattle Feeders' Planning Guide and Worksheets" were distributed at these meetings and from county Extension offices.

In addition, a 90-minute evening program on "Livestock Market Outlook and Cattle Feeding" was presented over educational television for a 15-county area of eastern South Dakota. In order that farmers and viewers could work out feeding budgets during the program, educational materials and worksheets were provided in advance.

Economics of Machinery Investment and Use

Today, S. D. farmers face a dilemma in machinery investment. Over-commitment results in high overhead costs that will reduce profits. Under-mechanization causes low labor productivity that also reduces profits. Agricultural credit agencies in South Dakota report that high machinery costs and inventories often contribute to farm business failures.

Extension held 19 county and area meetings in 1970 and 1971 to help individuals determine whether their particular operations would be



more profitable—owning-leasing or custom hiring machinery. Over 600 farmers and implement dealers attended. A television program and three radio programs also dealt with the subject.

Farm Management Education

Farmers and ranchers enrolled in Extension's "Ten Steps in Planning Your Farm or Ranch Business" educational program have realized nearly \$15 million additional net income since the program was initiated in 1965. Total net income for 1,100 participants in the 1971 sessions increased nearly \$2 million because they made changes in their farming practices or enterprises that more fully utilized their facilities. By capitalizing on present knowledge and technology in farm planning, Extension estimates that annual S. D. net farm income could be increased an additional \$33 million by 1980.



Changes in management initiated as a result of the "Ten Steps" classes are illustrated in the following table.

Changes Initiated as Result of Classes

	Per Cent of Farmers Enrolled Who Made Changes	Per Cent of Total Farmers in State Represented
Improved farm records	32.5%	3.21%
Increased labor utilization	19.1	1.89
Remodeled old buildings	16.7	1.65
Increased mechanization	13.0	1.29
Invested in new buildings	9.7	0.96
Rented more land	8.8	0.84
Bought more land	6.7	0.66
Changed land lease	6.4	0.63
Changed farmstead arrangement	5.4	0.53
Reduced off-farm employment	5.2	0.51
Made farm transfer plans	4.7	0.46
Changed family operating agreement	4.5	0.44
Increased off-farm employment	4.1	0.40
Changed livestock sharing agreement	3.1	0.30

Over 4,500 farmers have been enrolled in the program since 1965. Not only has the "Ten Steps" Program been instrumental in convincing participating farmers to change methods of operation, participants have gone home and convinced friends and neighbors to make changes to increase incomes. Nearly 20,000 copies of the "Ten Steps" reference circular have been distributed. County agricultural agents, area farm agents and specialists report that more and more individual farmers and ranchers are coming to them with farm planning and management problems.

Tribal Management of Range Lands

Proper management of thousands of acres of grazing land could improve the economic position for the American Indian. To accomplish this would require developing units of adequate size for profitable operation, plus necessary financing.

Extension has been providing technical assistance to groups of Indians on the Standing Rock Indian Reservation interested in forming cooper-

ative grazing associations. The object of forming cooperatives is to group grazing lands into clusters for better management. The tribe also is considering the formation of a tribal ranch, based on dryland and irrigated land. Various potential uses were analyzed.

This year, two cattle cooperatives were chartered on the Standing Rock Indian Reservation. One of the cooperatives plans to adopt a yearling buy-sell program, utilizing summer grazing. The other will set up a cow herd operation. A tribal plan to integrate dryland grazing land into an irrigation operation has not been completed because a major portion of the dryland is currently rented to individual operators. The tribe, however, is purchasing calves in the fall, feeding them alfalfa hay and grain from irrigated land and selling them as spring yearlings.

These new ideas have generated considerable interest. Reservation residents are thinking about organizing additional grazing cooperatives. The Farmers Home Administration also is studying the feasibility of furthering the programs.



livestock... BIG in s.d. economy

Beef

Livestock accounted for almost \$819 million of the state's \$1.1 billion agriculture industry in 1970. Growth in the livestock industry came about through expansion in beef-cow numbers, expanded hog production and increased feeding of beef calves.

S. D. beef cows numbered almost 1.7 million head in 1970. The annual calf crop is about 1,685,000 head. About 552,000 head of this amount are finished for market in S. D. feedlots; a large portion of the weaned calves are "backgrounded" or "warmed up"; and the balance is for herd replacement or shipped out of state as feeder calves.

Livestock Nutrition

South Dakota loses a large potential income by shipping out over half the calves (feeders and backgrounded) and large amounts of feed grains.

In an effort to stem this resource export tide, Extension livestock specialists have been providing producers with information that will enable them to market feed grains through livestock and to increase cattle feeding efficiency.

The number of cattle fed to slaughter weights could easily be doubled with the feed grains available.

In the central area where feed grains may be too short or in short supply to finish cattle, Extension is showing how to "background" or "warm up" beef calves to make the best use of forages and low-value feed grains. Over 2,000 producers were assisted in getting started on this system of feeding. Approximately 406,000 head of calves were "backgrounded." **If the average gain of each of these animals were 200 pounds, this meant that last year over 81 million additional pounds of beef were produced in South Dakota.**

"Backgrounding" is taking 400-pound weaned calves and putting an additional 200 to 350 pounds on through a high roughage-low grain ra-

tion for economical gains. At 650 to 700 pounds, "backgrounded" calves are moved to commercial lots or to individual feeders.

South Dakota can expect a continued increase in "background" feeding as the demand for 650- to 750-pound feeders to increase in other sections of the country.

A 1½-hour live television program and 12 meetings on expanding feeding operations and systems of feeding and animal health were presented in eastern South Dakota.

South Dakota, which ranked 10th nationally in fed cattle marketing, fed out an estimated 552,000 beef cattle in 1970. Extension livestock specialists estimate that this amount could easily have been doubled with the feed grains available. One of the biggest losses chalked up to cattle feeders is the failure to combine the feedstuffs available in the right proportions at the various stages of the feeding period for the most economical and maximum gains. A computerized ration formulation service was begun in late 1970 to assist feeders to achieve these gains.



Five one-day ruminant nutrition workshops, emphasizing basic ruminant nutrition, nutritional requirements of feedlot cattle and beef cows and ration formulation were held for nearly 80 practicing veterinarians. Cattle feeding handbooks, prepared at SDSU, also were distributed.

A three-day workshop for feed salesmen from Farmland Industries, featuring ration formulation and nutrition and growing-finishing of beef cattle also was held.

Over 1,500 cattle feeders, interested in improving their cattle feeding operations, were assisted by Extension specialists last winter.

Extension livestock specialists estimate that as a result of a series of in-depth beef-cow reproduction training sessions, approximately 4,500 cow-

calf producers are flushing beef cows to improve reproduction performance. The series of four sessions was held at six locations in western South Dakota. In addition, about 7,000 beef producers now give special attention to mineral supplementation during the fall and winter where they did not before. A total of 650 producers attended the four sessions.

Another workshop series in western South Dakota zeroed in on utilization of forage crops by beef cattle and sheep.

Beef Cattle Improvement through Testing

Performance testing experienced its largest growth since the program was initiated in 1949. There was a 10% increase in performance records processed under the State Beef Improvement Program—4,000 more than the previous year. The total number of cows on records was approximately 87,515 head, counting over 400 herds in which producers processed their own records. Records were processed on 36,464 calves on 405 ranches. One hundred and twenty-one ranches processed records on 6,319 yearlings.

Average weight of all calves in the records processed was 433 pounds—compared to a state average of 400 pounds.

Almost 6,200 producer contacts were made by Extension on beef cattle performance testing, breeding and selection. Follow-up contacts indicate a high degree of program acceptance by producers.

Extension held a series of cross-breeding training meetings for 46 county Extension agents. Performance testing data shows that about 20% of the calves produced in this state in 1970 had been cross-bred, indicating high acceptance of Extension-recommended breeding program guidelines.

Swine

South Dakota, which dropped from ninth to 10th place ranking nationally as a swine producing state in 1970, could decline more if production levels are not increased annually from 4 to 6% (about 100,000 head yearly over the next 10 years). Based on projected national per capita consumption needs, this means that the state must jump from 3.3 million hogs in 1970 to more than 4.3 million in 1980.

Swine production represents a cash farm income of about \$150 million annually. Because of this important cash flow and because the state has an excellent potential for meeting the projected pork needs, Extension has aimed at helping producers make the decisions needed to increase feeder pig and farrowing-finishing operations. Units which farrow out 60 to 100 litters each year offer great opportunities for S. D. family-size farms.

More than 600 pig producers attended a series of one-day meetings, held by Extension in 12 north-central counties. The meetings emphasized production of quality pigs through improved breeding, management, nutrition and housing programs. More than 4,000 copies of the "S. D. Feeder Pig Production Guide" were distributed.





Sheep

South Dakota, with wool, sheep and lambs valued at \$25 to \$27 million, finds itself at the crossroads. The state is one of the top six sheep producing states, but is in danger of losing this top-ranked position, despite the excellent money-making potential for the sheep industry. The Jan. 1, 1970, Livestock Inventory showed that lambs on feed went down 10% from the year before and that stock sheep were down 2% (the 1970 inventory showed 131,000 lambs on feed, 990,000 head of stock sheep and preliminary wool clip totaled 9,509,000 pounds).

Extension and the S. D. Pork Council produced five 30-minute TV programs on swine nutrition, selection and breeding, disease, economics and building for swine producers. Members of several area pork councils met during the TV showings over educational television and discussed the presentations and asked questions.

Extension has worked closely with marketing firms on the development of special feeder pig auction markets. Cooperation by the central market and weekly auction markets in developing feeder pig markets has been excellent. Feeder pig auctions provide a convenient and accessible market for producers to market pigs while assuring buyers of a ready source of high quality pigs.

Boar Testing Station Programs

The Extension swine specialist supervises the Swine Evaluation Station, which was established in 1958 to assist producers in identifying prospective breeding boars and superior lines of breeding. Thirty-three pens of five boars and barrows were tested under the boar testing program this year. Forty to 50% of the S. D. swine producers use this improved, modern way of building their herds. **Superior daily gains, feed efficiency and improved carcass quality have put an additional \$1.5 million into S. D. livestock industry.**

Extension sees a great potential for sheep production in South Dakota and will continue in its efforts to help develop this vital livestock industry.

Sheep field days were held to provide information on breeding and selection, feeding and nutrition, flock enterprise budgeting and marketing and carcass cutability. The field days emphasized findings of the National Sheep Industry Development Program Committee. Over 100 sheep producers attended county meetings to listen to a panel of sheep producers, host county agents and representatives in livestock financing discuss the sheep industry.

Ewe Marketing

Though South Dakota is an excellent source of high quality western breeding ewes, the state has found itself with dwindling sheep numbers. Out-of-state producers have found the state an excellent source of ewe replacements. In order to retain these ewes in South Dakota and to build up

the sheep industry, a concentrated effort was made by Extension to encourage producers to buy replacements in their home state. A listing of dealers and sheep salesmen from public yards was provided county agents for distribution to potential buyers.

Dairy

S. D. dairymen, adjusting to improved technology, have been moving away from stanchion housing to free stalls, to herringbone parlors, to liquid manure systems and mechanized silage feeding. These innovations have been adapted in order to reduce labor costs and to increase output.

The following statistics reflect only about a fourth of the activities which took place in dairy enterprises in South Dakota because the educational spinoff causes at least three other producers to imitate the innovators.

Last year, 218 producers converted to free-stall housing for the milking herd and 120 producers converted to free-stall housing for calves. Approximately 353 barns and milk rooms were built or improved and 134 producers converted to "inside" mechanical bunk feeding. Two hundred and thirty-four producers began using "outside" mechanical bunk feeding systems.

Fifty producers incorporated liquid manure systems and 96 converted to other mechanized manure handling systems to control pollution.



Dairy Cattle Nutrition

Feed continues to be the major cost item in the dairy enterprise. Ruminant development and function, vitamin and mineral requirements, methods of calculating rations on the basis of protein and net energy requirements as well as economics of dairy cattle nutrition and dry cow management were discussed at in-depth dairy nutrition schools. Over 300 producers attended.

Local dairy herd improvement associations sponsored additional nutrition meetings for interpreting and applying information on dairy herd improvement records. Savings of up to \$9 per ton of feed costs and milk production increases of up to 15 pounds per cow were reported as a result of the sessions. A more thorough understanding of the feeding recommendations and protein-energy relationships provided on electronically processed records enabled producers to maintain persistently higher lactation levels in their cows.

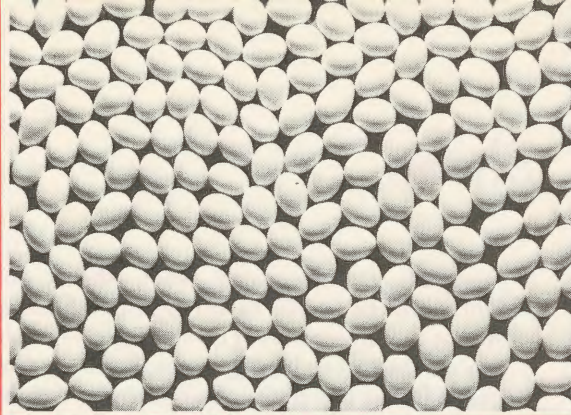
Producer DHIA Created

The first annual meeting of the newly-formed State Producer Dairy Herd Improvement Association on April 3, 1971, marked a milestone in the development of the dairy industry in South Dakota. The state association will carry out the maintenance functions of the state DHI program, coordinate programs for local associations and act in liaison with the Cooperative Extension Service for developing stronger educational programs. State board members will work with county agents, DHI supervisors and their association in defining the objectives, needs and problems of the association.

Poultry

Flock Records

Monthly flock record reports this year underscored the need for greater emphasis on manage-



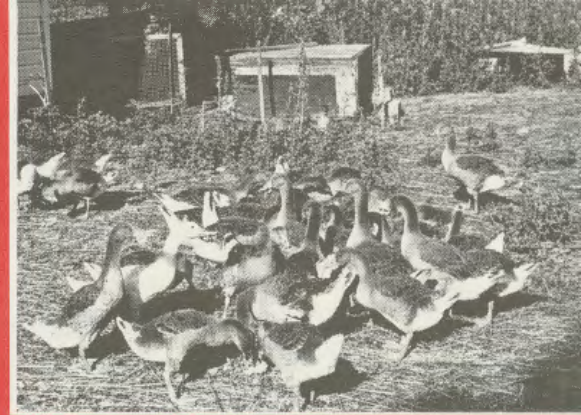
ment and marketing practices by producers, educators and financiers.

Egg producers experienced a painfully low price-high cost year in South Dakota's \$30 million poultry industry. The average producer needed 29.6 cents per dozen for all eggs sold to realize a fair return on his labor and investment, but received only 25.6 cents. During the previous year, producers received 33.8 cents per dozen for all eggs sold. Average feed cost was \$69.95 per ton compared to \$63.51 a year earlier. The average feed conversion was good, 4.25 pounds of feed per dozen eggs; this was one-fourth pound less than the goal of 4.5 pounds per dozen. Feed cost amounted to 14.8 cents per dozen eggs sold. Poultrymen estimate that for eggs to be reasonably profitable, the selling price should be double the amount of the feed cost per dozen.

An average of 54 flock owners participated in the SDSU Flock Record Program from June 1970 through May 1971. Their gross egg sales were \$1,-864,250 for an average egg income of \$34,523 per farm—\$4.72 per hen on a hen-day basis.

Goose Production and Marketing

Approximately 90% of the geese raised and processed in the United States are found in eastern South Dakota, western Minnesota and northwestern Iowa, with a large share located in eastern South Dakota. One of the largest goose processing plants in the United States is located in northeastern South Dakota.



One processor in the state distributed 20,000 goslings on contract to farmers in his area last spring. The birds went out in lots of 250 to 1,000 birds. Farmers have been able to net \$1 or more per bird on contract with this firm. Eleven hatcheries and one sales store produced and sold goslings under the supervision of the State Livestock Sanitary Board and the S. D. Poultry Improvement Association's pullorum-typhoid clean program. These hatcheries had 10,325 breeder geese in flocks that were officially tested by SDSU-trained testing agents.

Salmonella-typhomerium was isolated in goslings in two areas of the state during the previous hatching season. Extension worked with hatcheries, flockowners and the SDSU Veterinary Diagnostic Laboratory to trace the infection to specific breeder flocks. A successful sanitation program was outlined for those concerned and there was no re-occurrence of the disease that could be traced to S. D. hatcheries this year.

Processors, hatcherymen and growers are concerned that a surplus of goose meat held over from last year might have a price dampening effect the next season. A newly-formed national goose council has established a check-off program to collect funds from hatcherymen, growers and processors for the promotion and increased consumption of goose meat all year long (sales have previously focused on the Thanksgiving and Christmas season). The Poultry and Egg National Board is to develop the program and distribute publicity.

veterinary education



Bovine Brucellosis

South Dakota became a modified-certified brucellosis-free state in June 1971, after 20 years of effort. Extension personnel played an important role by providing information to cattlemen about the brucellosis program and the necessity of eventual eradication of this disease.

Extension has been a uniting force, particularly in the early years of the program, when there were divided opinions on merits of the program.

Public health records show a direct correlation between the incidence of human brucellosis and the disease in animals. As the incidence has been reduced in animals, there has been a dramatic drop in the number of human cases.

Now that South Dakota has attained the modified-certified brucellosis-free status, its next goal is **total** eradication. A national goal for **total** eradication has been set for 1978. Over 20 states are already brucellosis-free.

Hog Cholera

South Dakota achieved hog cholera-free status in July 1970, culminating a cooperative program that began in 1963. Constant vigilance by veterinarians and producers is necessary to maintain the cholera-free standing because of importation of pigs from other states and movement from farm to farm.

The SDSU Animal Disease Research and Diagnostic Laboratory has conducted tests on pigs

suspected of having cholera, but no cases were found in the state this year. Extension, extremely cognizant of the implications in the swine industry slogan, "Suspect cholera first," intends to keep producers alerted to the possibility of hog cholera reappearing in South Dakota.

IBR Abortion

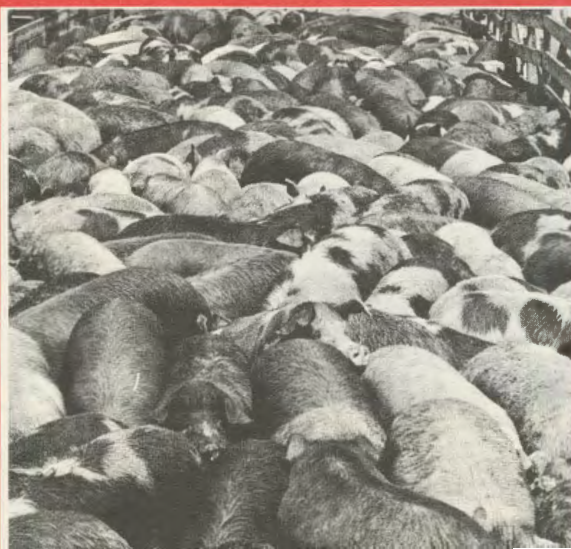
A survey by the SDSU Animal Disease Research and Diagnostic Laboratory on the causes of abortion in cattle showed a dramatic increase in the number of abortions due to infectious bovine rhinotracheitis (IBR or Rednose). There is

no effective treatment for IBR abortion once it starts in a herd of susceptible pregnant cows or heifers. A program of prevention by vaccination of non-pregnant females was initiated and all means of mass media communication were utilized to bring the problem to the attention of the livestock producers.

A tape cassette-slide series, describing the problem and giving vaccination recommendations, was particularly helpful in bringing the information to livestock producers.

Veterinarians indicate that Extension information programs are extremely successful for improved animal health. A practicing veterinarian, who said he had tried unsuccessfully for 10 years to get his clients on a herd-health vaccination program, said all it took to get 60% of his clients to vaccinate herds was a letter to cattlemen in his county from the county agent. The agent described leptospirosis, vibriosis and IBR.

Over 80 veterinarians enrolled for two-day seminars on equine practice, presented at Rapid City and Sioux Falls. One hundred and twenty veterinarians also attended Extension workshops on bovine and swine nutrition.



crops and soils

A major goal of Extension education in field crops production is to increase annual agricultural income of South Dakota by \$150 million (above the 1967 level) by applying up-to-date crop production technology, but without increasing acreages or market price (the dollar figure represents the total potential increase, including livestock gains from the crops).

Soil Conservation

According to the Soil Conservation Service, wind erosion damage in the spring of 1971 was 10 times worse than a year ago. Over-tillage—not drought—was the biggest contributing factor. Fields most affected were large acreages—over 60 acres in size—

lacking vegetative cover. Most of the soil movement occurred on fall-plowed fields, on last year's corn fields cut for silage and on summer fallowed fields, devoid of vegetative cover.

Extension education will continue to emphasize tillage practices which will maintain surface residues, encourage field strip cropping and contour strip cropping in an effort to reduce "dust bowl" conditions.

Soil Fertility

Fertilizer use in South Dakota increased approximately 28,000 tons, 11% over last year, representing an estimated increased net crop income of some \$31 million. **S. D. farmers could profitably use three to four times the present amount of fertilizer without creating pollution hazards.**

Extension soil management and fertilizer use education efforts were aimed at increasing fertilizer use and making applications more effective. This year, at least 40 field fertilizer use demonstrations were coordinated or carried out by Extension. Extension helped 1,775 individuals with fertilizer questions through educational methods. More than 6,600 soil and plant samples were processed through the SDSU Soils Testing Laboratory. This was only a percentage of the total amount of samples processed in South Dakota, because Extension emphasis in fertilizer education is to make dealers more effective in helping producers with fertilizer needs.

A major fertilizer retail firm reports:

"I am thoroughly convinced that the information you have supplied us on soil sampling, testing and test interpretations, recommendations and assistance in our workshops have greatly enhanced the knowledge of the local cooperative employees, making them better equipped to serve the farmers in their area."



Crop Production

Planting the highest yielding crop varieties with the greatest "built-in" protections against climatological- and disease-caused failures is important for successful crop production. The producer also must use the best cultural practices. The Extension Service assisted approximately 6,800 farmers in selecting small grain, flax and various row crop varieties.

Farm income probably increased between \$2 million and \$2½ million last year because 90% of the small grain acreage in South Dakota was planted to varieties recommended by the SDSU Experiment Station through the Extension Service.

County crop improvement associations, in cooperation with Extension, established 36 county crop variety plots in 1971, affording farmers opportunities to see and hear first-hand which varieties grow best in their respective areas. There were 252 demonstration plots in the county plantings under the immediate supervision of county agricultural agents. They featured wheat, barley, oats, flax, rye, triticale, corn, sorghum and soybeans.

The Extension Service works closely with the S. D. Crop Improvement Association in the release and distribution of new varieties and seed certification. There's need for wider acceptance by producers in the merits of using certified seed in this state. **Though 30,880 acres were devoted to production of certified seed in 1970, South Dakota has experienced no significant increase in use of certified seed during the last few years.** Approximately one million acres of cropland was seeded to certified seed or to seed from certified production, about the same as last year.

The S. D. Crop Improvement Association worked hard to secure for the Experiment Station a \$200,000 appropriation from the legislature to build two crop breeding greenhouses and a laboratory building at SDSU. The State Wheat Commission contributed \$100,000 for the facilities. Dedication ceremonies took place July 8, 1971.

Sunflowers

Producers in northeastern S. D. counties are recognizing the potential in oil-type sunflower seed production which, with good management, could compete with other row crops. Seventy acres of high oil-bearing sunflower seeds were planted in one county in 1969. Approximately 3,500 acres were planted in a three-county area in 1971.

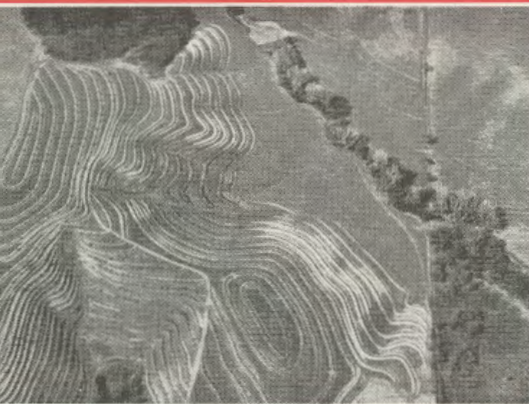
During these three pioneer years, Extension agronomists, county agricultural agents and industry representatives have been involved in numerous educational methods providing seedling management and harvesting information.

Pasture Improvement and Management

Extension's pasture improvement program, initiated in 1964, stresses fertilizer use, interseeding and weed control as methods of improving production on "worn out" pastures. **Last year, almost 20,500 acres were interseeded in 32 counties, 204,125 acres were fertilized in 44 counties and almost 176,000 acres in 44 counties were sprayed for weed control.**

Use of two or more of the pasture improvement practices frequently increases pasture production 50 to 70 per cent; however, lack of moisture may sometimes delay responses. Fertilizer in these cases has not been wasted, because it will improve production during more favorable years which follow.





Most of the persons practicing pasture improvement recommendations tell Extension success stories like these:

A producer who said he applied fertilizer on a bluegrass mountain in a southwestern county found he increased forage production $2\frac{1}{2}$ times.

Fall application of fertilizer on crested wheatgrass in a north central county brought a "worn out" pasture into high production for early spring grazing.

In the northeast, over 30,000 acres of pasture were improved by use of one or more of the improvement methods during the last eight years.

Fertilizing Pastures

Extension sees the need for fertilizing pastures in several western S. D. counties. **Only 27% of the 1.3 million acres of the state's pasture land and 61% of the state's 22.8 million acres of rangeland are adequately fertilized.** Extension has demonstrated how proper fertilizer applications can increase pasture and hayland production by more than 50% and, in some cases, even double forage production.

Approximately 211 farmers and ranchers attended forage crop production and utilization shortcourses, held at 10 locations in western South Dakota.

Pasture Management

Extension has continued to hammer away at pasture rotation and rotation grazing as other options for improving pasture-carrying capacities. About 1,200 farmers in 42 counties are now rotating pastures. Over 2,000 are practicing rotation grazing.

A sampling of phenomenal successes includes:

A farmer in northeastern South Dakota who doubled his cow-carrying capacity on one pasture.

A western county farmer who found that by rotation grazing he could pasture 1,600 ewes and lambs and 320 cows and calves on 160 acres for over 60 days (when cattle were rotated to native pasture).

A south central producer who used pasture rotation and fertilizer to increase his stocking rate $2\frac{1}{2}$ -fold.

Renovation

Many farmers believe that complete renovation to secure stands of more productive grasses is worth the extra cost. One farmer, who increased grass production five-fold, felt his grass program worked out so well that he could sell 320 acres of his less productive pasture and still end up with more feed than when he began his pasture program. **S. D. producers renovated almost 54,000 acres during the last two years in 36 counties.**

Weed Control

Noxious Weeds

Noxious weeds, which now infest 2.3 million acres of S. D. farmland, represent a serious perennial pest problem. Extension education programs have helped implement control measures now practiced on 1.6 million infested acres. **Last year, the estimated value of the noxious weed control program, which cost approximately \$250,000, was about \$20 million.**

Noxious weeds, which are increasing, are extremely difficult to eradicate and require continued control efforts. Their presence reduces crop yields and land values. Canada thistle and perennial sowthistle were reported on 366,000 acres in 1965. Now it is found on 644,000 acres. **Where Extension education efforts have received major emphasis, infestations have been reduced and further spread prevented.**

County and state Extension personnel, cooperating with county weed boards and weed supervisors, have been providing noxious weed control education programs through county weed meetings and tours, demonstrations and training sessions. Information also has been provided through fact sheets, news releases, radio and TV programs and newsletters.

Annual Weeds

Annual weeds, which take a heavy toll in grain yields and reduce quality, are found in all croplands in South Dakota. Extension programs try to help farmers choose the proper herbicides to control these weeds. **County agricultural agents in 47 counties estimate that over 3 million acres of small grain were sprayed with 2,4-D in 1971. In addition, nearly 1.5 million acres of corn were treated with herbicides in 44 counties.** Without these efforts, many of these fields would have become total losses due to annual weed competition.

Horticulture Forestry



Rural and urban residents of South Dakota rely on horticulture and forestry specialists and county Extension personnel for assistance in solving yard and garden problems. In the growing season, requests received by the state office specialists average about 200 a month. This number is equaled by many county offices. As a result of this volume exchange of information, cooperators are able to grow more productive fruit and vegetable gardens as well as better lawns, flowers, trees and shrubs.

Tree Banking

Instead of waiting 10 years for a shade tree to develop from a small bare-root planting, people nowadays want instant shade. If possible, they'd like to have a tree to shade them the same afternoon they plant the tree. Believe it or not, recent developments in tree moving equipment have made it possible to meet these demands! At least five hydraulically - operated machines are available now in South Dakota that make moving and

transplanting 15- to 20-foot trees easy. The problem now is to find enough large trees that can be moved.

This year, Extension forestry and horticulture specialists prepared circulars, news stories and slide-tape presentations on a "tree bank" idea, showing how park departments or private enterprises could capitalize on these new machines, planting trees in nursery plots to be moved in 5 or 10 years as replacements for old or dying trees in cities or on farmsteads. The "tree bank" replacements also are suitable for new housing areas.

The Extension specialists showed how "tree banks" might be used to cover the devastating scars expected to occur in many cities because of Dutch elm disease. Instead of planting small seedlings to replace 40-foot elm giants, 15- to 20-foot trees could be moved in from "tree banks."

Since Extension first described the "tree bank" concept in the fall of 1970, Aberdeen, Brookings, Vermillion, Mitchell and Huron have or are developing plans for "tree banks." Other South Dakota cities have requested information and Extension specialists have arranged transplanting demonstrations. Cities in Kansas, North Dakota, Iowa and Nebraska also have requested information on "tree banks."

Evergreens for Windbreaks

Low initial survival rates of evergreens in prairie states have discouraged many landowners from including conifers in their planting plans, although this type of "over-wintering" tree is the most effective for wind control.

After two years of successful evergreen potting programs, carried out through 4-H projects and others, Extension had high hopes it had the survival problem solved, but on the third year an early dormancy-breaking problem brought a setback. Foresters, Soil Conservation Service personnel and nurserymen are now looking for ways to remove evergreen tree seedlings from nurseries before they break dormancy. This will increase chances for survival. Experimental plantings



were set out to learn more about effects of tree lifting dates on survival. The Association of Soil Conservation Districts are providing funds for SDSU to research the problems.

In another tree planting educational effort, Extension was called on to prepare a cassette tape-slide presentation on tree planting and handling of nursery stock for county planting crews in the soil conservation districts.

Landscaping

Almost 900 S. D. families were given landscape planning assistance either by county Extension agents or specialists.

Landscape planning workshops were conducted in Brown, Roberts and Jerauld Counties. Participants were provided information on landscaping principles and helped in drawing landscape plans and in preparing landscape plant material lists for their homes. Landscaping and landscape maintenance lessons were also presented to Rosebud Housing Program aides and Neighborhood Youth Corps enrollees.

An all-day home landscape tour was conducted for Stanley County Extension homemakers clubs. At each of the home stops on the tour, the group discussed the good and bad features of the home landscape practices and heard an Extension specialist suggest changes, corrections or improvements. This practical approach to landscaping provided cooperators with first-hand ideas for making improvements.

A slide series, a cassette tape narration and landscape planning circulars also were distributed on landscaping.



Food Gardens

Vegetable gardening training was provided home economists and Expanded Nutrition Program aides working in Minnehaha, Meade, Pennington, Lawrence, Butte, Charles Mix, Beadle, Codington, Grant and Roberts Counties and the Standing Rock Indian Reservation. This training, plus a fruits and vegetables fact sheet and a vegetables growing circular, helped inexperienced gardeners learn the nutritional and economic value of home gardens.

Lessons on vegetable gardening also were given Extension homemakers club leaders in Brule, Lyman, Gregory, Yankton, Douglas, Charles Mix and Aurora Counties. Flower gardening lessons were given in Bon Homme, Kingsbury and Minnehaha Counties.

Plant Diseases

Southern Corn Leaf Blight

Southern Corn Leaf Blight, a new fungus disease, severely attacked most corn hybrids in the United States in 1970, causing a 15% reduction in corn production in Corn Belt states; however, the disease did not measurably affect S. D. yields. Extension informed growers as to the causes of this serious crop disease, described its potential threat for the 1971 crop and provided ideas to help offset epidemic losses.

Disease Identification

Extension, through the SDSU Plant Disease Clinic, provided urban and rural homeowners, farmers, institutions, golf courses and others with disease identification and control assistance for shade trees, shelterbelts, ornamental shrubs, flowers, fruits, vegetables and house plants. Diagnoses were provided by correspondence on 547 plant specimens; another 187 cases were helped through home and field visits.

One hundred and eight elm tree specimens were diagnosed at the Plant Disease Clinic at SDSU as having Dutch elm disease (during the 12 months ending June 30, 1971). A substantial increase this spring in the number of cases indicates that South Dakotans should expect rapid increases of Dutch elm disease over the next several years. Unfortunately, a control program is no longer feasible, due to the banning of DDT. Therefore, the only recourse is to destroy infected trees as they are found. The costs involved in simply removing dead trees could become a serious financial burden for some communities.

Seed barley infested with loose smut can be costly. Thus 162 growers' barley seed specimens were given the embryo test to determine the percent of loose smut infected seed. Loose smut, a floral infesting fungus disease which infects the developing seed embryo, can only be determined by a laboratory test.

Insects, Pesticides

Rootworm Control

Rootworm treatments, described by Extension, was of benefit to 90% of the growers, those who practiced chemical or cultural rootworm control measures in 1970. **Rootworm control helped put an additional 15 million bushels of S. D. corn in the bins. Farmers treated over 900,000 acres with recommended corn rootworm insecticides. Crop rotation as a control measure was used on another 1.1 million acres.**

Corn Borer Control

Corn borers were a problem in 29 counties in 1970, causing considerable crop loss. Ten thousand acres were treated for first brood borer, the first attempt by farmers in recent years to control this pest. Though this was an extremely small area in comparison to the acres that actually required treatment, it saved 150,000 bushels of corn. Producers were ready for infestations predicted for 1971. The outbreak occurred during a 10-day period in southeastern South Dakota. An estimated 250,000 acres were treated. Other educational efforts this year encouraged early harvest of fields infested with second brood borers as a means of reducing further losses.

Early detection and treatment of armyworm problems on rye and winter wheat saved an estimated \$1 million worth of crops in 14 counties.

Greenbug infestations were predicted for 1971. Extension provided information that enabled producers to know when and how to treat an estimated 100,000 acres of infested sorghum. This represents an estimated \$750,000 savings to S. D. farmers. Demonstration plots showed a 25% average increase in yields where insecticide treatments were applied for greenbugs.

Other Extension entomological problems included alfalfa weevils, grasshoppers, cutworms and wireworms in localized areas.

Biological Insect Control Investigations

Extension was instrumental in the development of a 3-year research program on biological control of weeds at SDSU, initiated in April 1970, with grant funds from the S. D. Wheat Commission. A USDA grant also supports part of this research.

Scientists are trying to determine if phytophagous insects can be used to control Canada thistle and thus reduce the need for chemical agents in weed control. Two species of insects, a flea beetle and a weevil, feed on Canada thistle. The flea beetle has been released in Brookings, Moody and Lawrence Counties. Preliminary studies of another beetle from Pennsylvania also have been initiated.

Pesticide Safe Use

Extension's in-depth training for ground applicators and aerial applicators continued as part of the state's licensing program. In this program Extension provides insecticide recommendations, discusses legal aspects of pesticide, herbicide and fungicide use and tells about changes in registry and safety.

South Dakota was one of 44 states involved in a national training program for extended safe use of ethyl parathion, developed in cooperation with USDA, the Environmental Protection Agency, the Extension Service and parathion manufacturers. Ethyl parathion is a useful product for field crop pest control, but applicators and county agents must know how to safely apply it.

Extension also was involved in solving emergency pesticide problems in cases where material had been spilled, improperly disposed of or misused in some manner on the land or in farm ponds. Persons requesting help were shown how to decontaminate problem areas.

Extension revised an insecticide use chart and with the help of the pesticide laboratory at SDSU, implemented a flock-egg sampling procedure to help egg buyers monitor individual flocks against pesticide residues. The isolation technique developed will probably save money for both producers and buyers because it will virtually eliminate condemnation of tank-car lots of eggs.

Pest Control for Low Income Families

Extension's Expanded Nutrition Program integrated home pest control and pesticide safety into the training sessions for program assistants. Training sessions included tips on insect identification, sanitation, health, and safe and economical pesticide use. Some of the clients had never handled pesticides. Program coordinators in 12 other states requested copies for training materials to use in low income nutrition training programs.

Indian workers, undergoing training as assistants or sanitarians in the Sioux 400 Housing Project on the Rosebud Indian Reservation, met in training sessions for insect control recommendations and to learn how to identify insect and health problems. A pest control folder was prepared for tenants.



wildlife

A wildlife specialist was added in 1971 through legislative appropriation and funding from the S. D. Department of Game, Fish and Parks to carry out needed wildlife habitat improvement and nuisance animal control programs.

Nuisance Animal Control

Approximately 6,000 rural landowners were given help in controlling nuisance wildlife species the first year. More contacts were made regarding pocket gophers than any other species. Other animals dealt with included skunks, raccoons, prairie dogs, ground squirrels, foxes, rats, rabbits, snakes, squirrels, moles, coyotes and badgers. Fact sheets and radio programs were prepared that dealt with nuisance animal control problems.





Extension agents made 778 consultations in Brule, Hanson and Hughes Counties in a rabies control program, primarily involving skunks.

Extension worked with the S. D. Department of Game, Fish and Parks in establishing a new program for nuisance animal control east of the Missouri River. Five trappers were hired in July 1971 by the Game, Fish and Parks Department to teach individuals and groups control techniques for larger carnivores, primarily. They also will be involved with nuisance animals. Working closely with county agricultural agents and Game, Fish and Parks Department conservation officers, the expert trappers will also provide individual assistance where control by an expert is needed.

Wildlife Habitat Improvement

Because of intensified land use the last 25 years, wildlife habitat areas of South Dakota have been reduced. As a result, several of South Dakota's important game species have declined, resulting in decline of out-of-state hunting revenue as

well as limiting recreational opportunities for state residents.

Extension is participating with the Game, Fish and Parks Department, the U. S. Bureau of Sport Fisheries and Wildlife and other agencies in an effort to maintain existing habitat and to improve other areas for increased wildlife populations. In this effort, Extension developed three series of slides with taped scripts to describe habitat improvement techniques, authored a S. D. Conservation Digest article and several radio shows discussing wildlife habitat improvement.

Last year, Extension assisted in the establishment of habitat plantings on 60,773 acres in South Dakota which were funded by the Agricultural Conservation Program and the Wildlife Habitat Program (the latter administered by the State Game, Fish and Parks Department). In addition, 1,996 acres of shallow water areas were created, 153 wildlife ponds were constructed and 3,515 acres were fenced to protect wildlife cover.

Extension cooperated with the Agricultural Stabilization and Conservation Service on a program aimed at increasing participation in these programs in 1971. Handbills and displays at the State Fair and at several county shows drew attention to the habitat problems and to improvement programs.

Extension was instrumental in originating two special Rural Environmental Assistance Programs (REAP) in Campbell, Walworth, Potter, Sully and Hughes Counties, which will eventually involve more than \$2 million in federal funds. The purposes of the project are to decrease sedimentation of the Missouri River reservoirs (thus improving fish conditions) and to re-establish some of the wildlife habitat lost.

Extension helped plan and co-sponsor with the Game, Fish and Parks Department a new "Acres for Wildlife Program" this year. The proj-

ect encourages landowners to leave areas of one acre or more as cover for wildlife.

To improve the wetlands and ground water situation, Extension is cooperating with both the U. S. Bureau of Sport Fisheries and Wildlife and the State Game, Fish and Parks Department in their programs to preserve these areas for water and wildlife. To date, 216,166 acres have been preserved through perpetual easements and 51,401 acres have been purchased by the U. S. Bureau of Sport Fisheries and Wildlife. The Game, Fish and Parks Department has purchased an additional 115,000 acres for public benefit.

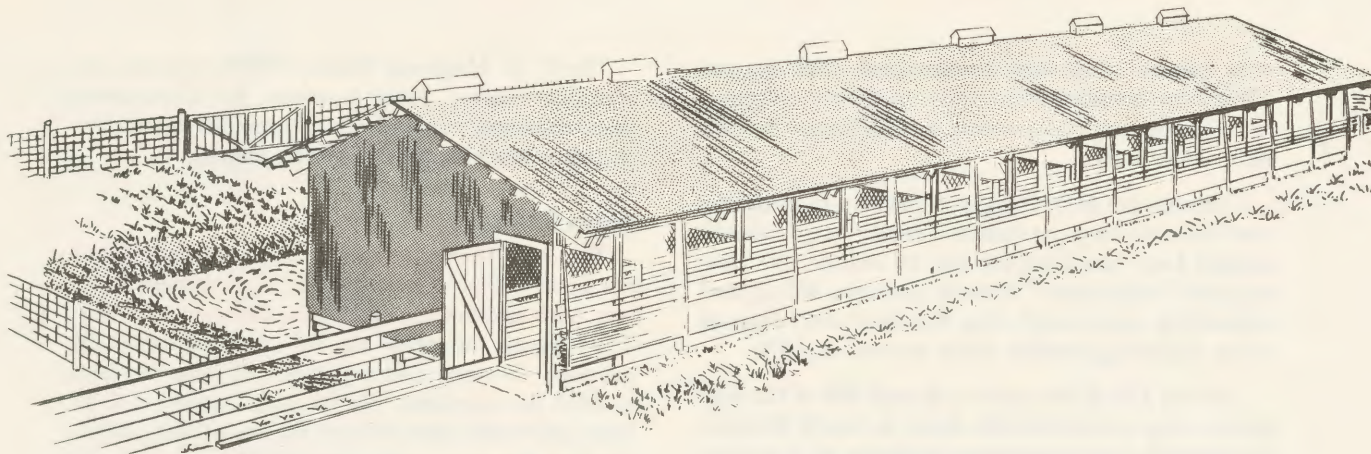
Management

Approximately 20 members of the Crow Creek Indian Reservation attended an Extension short course on fish ecology and management. Participants were trained as fishing guides on Lake Sharpe. This service, coupled with a new million-dollar-plus motel-restaurant-marine complex, should provide a much needed economic boost for the Crow Creek Indian Reservation.

Approximately 100 landowners were assisted in fisheries management projects. Extension provided information on construction of fish ponds, fish pond management and sources of supply of fish species for stocking.

Rearing game farm pheasants for release has become a popular project in South Dakota. Although of limited value for increasing the wild pheasant population, the project teaches poultry husbandry. This stimulates an interest in wildlife conservation and creates an awareness of habitat needs of pheasants. During 1970, 140 boys and 46 girls were involved in 4-H pheasant rearing projects. The State Game, Fish and Parks Department banded 6,090 pheasants for release in this project. Three per cent of the bands were returned.

Other wildlife projects include gun safety courses, boating and water safety.



agricultural engineering

Livestock Housing and Equipment

The trend to more environmentally-controlled housing, new methods and equipment for handling feed, manure, water and livestock and the need to reduce labor has hastened the obsolescence of many existing farm buildings. At the same time, new technology and structural methods are making it possible for well-planned new or remodeled buildings to contribute to more efficient livestock production. "Built-in" labor-saving features are taking the back-breaking work out of farming. They are also forcing the farmer to become a better manager.

Dairy Housing and Equipment

Extension provided dairy farmers with information on dairy herd housing, sanitary and labor-

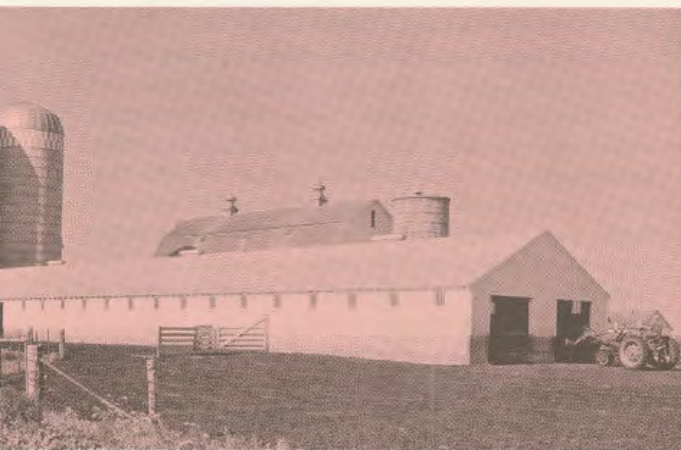
saving milking and milk handling facilities and efficient feed handling. Extension educational programs have long recognized that the problems of dairy housing are part of the whole dairy farm production complex and require an inter-disciplinary approach. For example, Extension agricultural engineers work closely with Extension dairymen and State Department of Agricultural personnel to help farmers solve housing and equipment problems (dairy structures detailed in Animal Science section).

Swine Housing and Equipment

Extension has stressed that adequate swine housing and equipment make it possible to control environment for optimum survival and daily

gains, to save labor in handling feed, water and wastes, to provide better sanitation control, to protect animals and to minimize potential air and water pollution from swine wastes.

This year, 205 S. D. swine producers built new farrowing houses and 589 producers remodeled existing buildings for farrowing. Two hundred forty-two of these producers installed either partially-slotted or completely-slotted floors and liquid manure handling systems in their farrowing units. One hundred ninety-two new growing and finishing buildings were built and 534 buildings were remodeled for growing and finishing swine. Two hundred sixty-seven of these have slotted floors and handle liquid manure.





Beef Housing Facilities

In beef feeding enterprises Extension is striving to more fully mechanize units to reduce labor cost or human effort expended in livestock production. **Two hundred six beef producers in South Dakota added mechanical bunk feeders in 1970. In addition, 504 producers installed fence-line bunks and power-wagon feeding systems. Sixty-nine producers converted to inside feeding arrangements.**

Crop Harvest, Storage and Drying

Extension provided information on crop harvesting, storage, processing and handling equipment. High moisture grain storage practices have been adopted by many livestock feeders because it offers the advantages of early harvest, efficient use of equipment and labor in harvesting, low cost and flexible storage structures, plus a minimum amount of labor in processing. Feeding trials have shown that high moisture corn is at least equal to dry corn for most livestock. Dry grain storage, with drying facilities, however, is more flexible because the grain can be fed or sold. South Dakota farmers also are constructing more permanent types of silage and low-moisture forage structures to reduce storage losses. It is easy to mechanize these types of feed storage systems.

More than 10,000 farmers in 1970 field-shelled or combined their corn; 2,085 of these farmers stored corn in high-moisture storage units; 574

new bunker silos were constructed; 488 upright silos were constructed (most of them equipped with unloading equipment); and 171 new trench silos were built.

Farmers are increasingly interested in planning and constructing permanent "ready-to-go" mechanized feed handling centers to reduce the "set-up" and "take-down" time of portable filling and unloading equipment. One hundred sixty-four of these handling centers were started in 1970.

About 17% of the corn crop and 23% of the sorghum crop are artificially dried in South Dakota, representing an investment of about \$7.5 million in drying equipment. Extension assisted over 1,000 farm operators with information on crop drying systems.

Methods and Materials of Construction

Seventy-one retail lumber dealers were registered for an Extension short course on ventilation and insulation of farm buildings. The Extension Service sold 1,434 farm building plans and plan books.

Farm Safety Education

Not one of the more than 1,100 boys and girls, 14 and 15 years old who completed Extension's 20- to 24-hour farm safety training course, was involved in a serious work accident last year. Successful completion of this course entitles a youth to a certificate which exempts him from specified jobs included in the Department of Labor's Hazardous Occupation in Agriculture Order. This allows him to work at farm jobs outside the family farm.

With the shortage of farm labor, Extension estimates that the program has put an additional 1,500 to 1,700 persons in the agricultural labor pool. Between 60 and 70% of the trained youths found farm employment.

The S. D. Highway Patrol, VWF, Jaycees, implement dealers, game wardens, fire department personnel and rural electric cooperatives participated in teaching phases of the course.

Farm Safety

Ohio and Michigan studies indicate that about one farm in seven has a disabling accident each year with an average of 10 days lost per accident.

They figure the price tag for medical attention, property damage and replacement help amounts to \$218 per accident. At this rate last year, S. D. farm accidents cost at least \$1.24 million, not including the irreparable loss of 37 lives on S. D. farms last year.

Extension provided safety information through radio and TV programs and news releases in addition to supporting the efforts of the S. D. Farm Safety Council. The council conducted a youth safety talk contest during the State Fair, sponsored a State Fair safety booth and publicized Farm Safety Week.

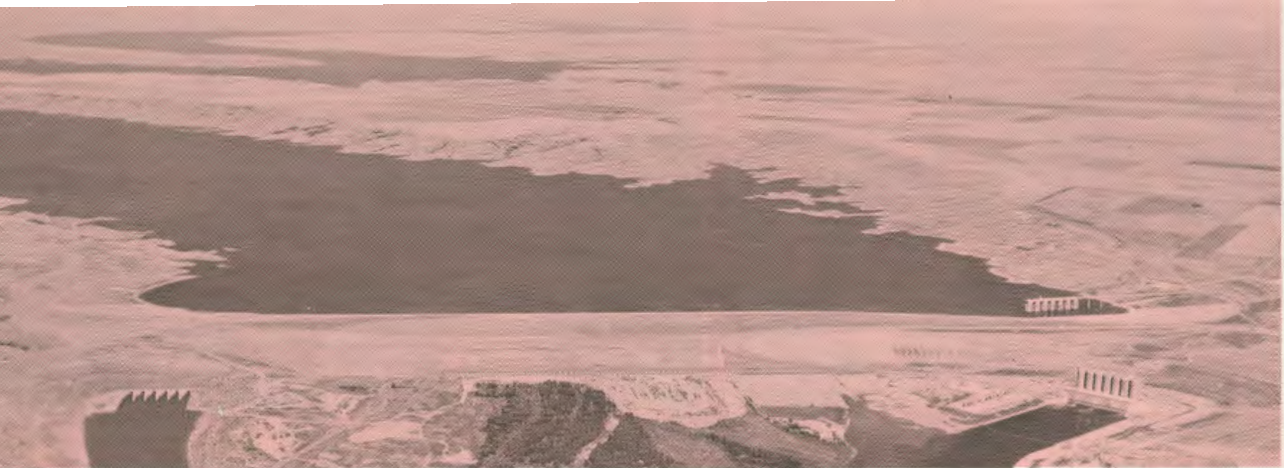
About 1,200 4-H members were given safety instructions at 4-H Camp Lakodia last summer.

Emergency Preparedness

Extension provided 1,100 persons with information on preparing for and coping with disasters this year. An Extension fact sheet, entitled, "Blizzard and Cold Weather Tips," has been especially popular. Since its publication in 1967, more than 60,000 copies have been distributed.

Water Systems and Water Quality

South Dakota is an area of generally poor water quality, compared with states east and south of it. Many domestic water users have problems with hardness, iron and other minerals in water. Extension's new publication, "Private Water Systems," has helped South Dakotans solve some of their water problems. In addition, Extension workers helped over 900 persons plan water systems. Over 1,500 were helped in consultations on water quality problems.



Irrigation

With the Oahe Irrigation Unit becoming more eminent and the geologic studies finding new water aquifers, a place where irrigators and potential irrigators could see the latest kind of irrigation equipment and practices was necessary. Thus, this year, the irrigation industry and interested private and public groups provided money and equipment for a new Extension irrigation demonstration facility at the James Valley Research and Extension Center near Redfield. Funds and equipment have made it possible for eight types of gravity irrigation systems at the site. Sprinkler systems are included in future plans and systems demonstrated will be changed as innovations develop. The center will supply valuable irrigation educational information as well as demonstrations.

New Services Offered

Twenty-seven irrigators have taken advantage of two new services offered irrigators by the Extension Service—a moisture accounting system and a portable water meter and draw-down indicator for checking output of irrigation wells. The moisture accounting program is a supplemental tool to help the irrigator schedule water applications when crops actually need it.

Cultural Practice Demonstrations

With poor cultural practices an irrigator can apply the right amount of water and still end up with low yields. Extension has selected good farmers for demonstration purposes to show potential and existing irrigators what maximum yields are actually available with good management and good cultural practices under field conditions. Irrigation engineers will work closely with these cooperators, who in turn will provide an accounting of expenses and returns needed for a thorough analysis of the results.

Cooperators include a farmer who irrigates potatoes, another who irrigates pastures and another who produces grass seed on irrigated land.

Potatoes

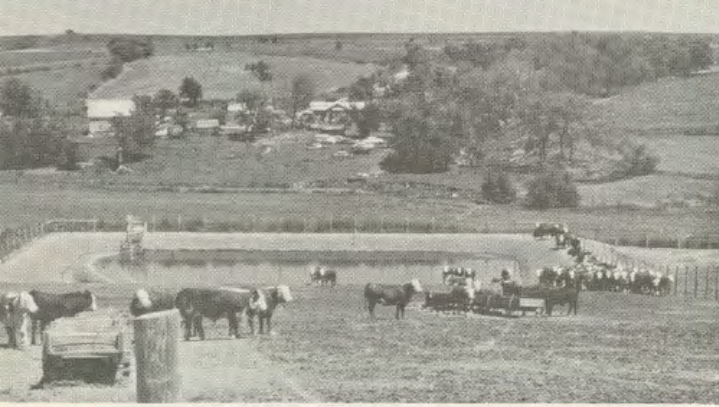
A new potato chipping plant was recently constructed at Clark. Irrigation can supply a stable supply of potatoes for this operation. A Clark County first-year irrigator agreed to follow all practices recommended by the Extension Service and demonstrate the results of different herbicides and insecticides. In return, the irrigator will make available all cost and return figures from the operation. The goal is 30,000 pounds of potatoes per acre, which is between three and four times the average yield produced on dry land acres in the area. This yield will give a gross of approximately \$50,000 worth of produce per quarter section.

The cooperator is following a complete herbicide weed control program, a complete systemic for insect control, plant population as determined at the Redfield Irrigation Farm and will use the water budgeting service offered by Extension.

Pastures

An irrigation demonstration on a Brown County farm will provide answers to the number of pounds of beef that can be produced per acre under specific management practices.





The goal is 1,000 pounds of beef per acre. The dominant forage is alfalfa and will be grown with brome. Yearlings are being rotated on six different pastures of one acre each. The irrigated forage is being supplemented with three pounds of corn and bloat guard. Questions Extension will be seeking include: Total production, length of grazing period, regrowth periods and how many head is optimum per acre?

Grass Seed Production

A seed company at Huron and area growers began establishing bluegrass seed production stands under irrigation in the fall of 1971. Operations such as this will permit corn farmers to irrigate the grass in the fall and early spring spreading equipment costs over a larger acreage. Contract price for seed produced is 75 cents per pound of clean seed.

Pre-Emergence Herbicides

Since cultural practices are essential if an irrigator expects to produce a top yielding crop, demonstrations using herbicides and insecticides, recommended by state Extension specialists were conducted on seven irrigation farms.

One of the firsts for South Dakota was running pre-emergence herbicides through the irrigation system. This demonstration was carried on at three farms, using two herbicides as well as combinations of the two chemicals. Approximately 135 acres were treated.

Chemicals were applied with a positive displacement pump injecting chemicals through center pivots as soon as the corn was planted. **A**

Hurley farmer, feels that on a field treated on his farm, corn stands were increased 30%. He expects a 25-bushel yield difference on his treated field because of the weed-free conditions and added stand count.

Conservancy Sub-Districts

Directors of South Dakota's six conservancy sub-districts asked their managers and Extension to study 10 problems which directors felt were inhibiting water resources development. Three problems concerned state legislation and seven pertained to federal legislation and operating policy.

The study committee drafted legislative revision and policy statements for submission to federal agencies.

As a result, one revision in state statutes was accomplished, another proposal was submitted by the state legislature to the state Local Government Study Commission and another went to the state Legislative Research Council.

Issues pertaining to federal legislation and agency policy will be taken up by an ad-hoc committee of sub-district directors in Washington, D. C.

Special Purpose Districts

Extension was instrumental in providing information needed to form an irrigation district and two small watershed districts this year. One non-profit corporation to serve a rural community water system was formed and two others are working out details for similar corporations. Construction was completed on a previously organized program.

Pollution Control

The State Water Pollution Control Committee was scheduled in the summer of 1971 to make a final decision on regulations for livestock waste disposal. Livestock producers and feeding operators were concerned. Livestock associations needed more information before they could make intelligent proposals to the committee.

Extension prepared information packets on the subject and held 20 meetings throughout the state to explain legal requirements, regulations, recommendations for control and sources of cost-sharing moneys. In addition, a series of six in-depth newspaper and magazine articles and a taped-slide presentation were prepared. A more detailed publication dealing with the total problem of livestock runoff will be published.

Minimum Tillage Demonstration

Fifteen to 20% of the Corn in South Dakota is now planted with minimum tillage methods as compared to 5% five years ago. An estimated 2,000 farmers attended an Extension minimum tillage demonstration near Mitchell. Thousands more toured the plots during the growing season and attended activities during harvest day. Income comparisons from the field day influenced many farmers to switch from a conventional seeding operation to a minimum tillage operation.

Thirty-three organizations in the Mitchell area, including 13 implement dealers, were involved and cooperated in sponsoring the demonstration.

extension in the home

Extension Homemaker's Program

The Extension Homemakers' Program is for all of the women of South Dakota. More than 13,000 club women are helped through projects planned and conducted by the S. D. Homemakers' Council and through volunteer project leaders who teach members of their home club what they have learned in county and statewide training sessions.

Extension makes home economics workshops and training sessions available to all homemakers, not simply to the 13,000 women enrolled in clubs. For example, half of the 2,354 persons enrolled in this year's clothing construction workshops were non-members.

The state council won the National Cultural Arts Award in 1970 when 1,000 local club members achieved the requirements for certificates in cultural arts activities. They were also second place award winners in 1971. The educational effort was designed to help people learn to enjoy and use leisure time.

The council won the National Elin Anderson Award in 1971 for a statewide health project on drug use and abuse. The educational project also was used by churches, Scouts, schools and 4-H groups. Homemakers groups have actively raised money to furnish county 4-H buildings and pro-

vided volunteer help to public health nurses at immunization clinics.

Consumer education programs continue to receive heavy emphasis in Extension information classes and workshops. **Consumer education programs take 50% of the time of Extension home economists.** In every subject matter area, consumer information is a part of the lesson. Fifty per cent of all news stories, radio and TV programs in the home economics area this year were on consumer buying and consumer decision-making topics.

Home Furnishings and Equipment

Extension programs in home furnishings and household equipment reached 12,114 persons in 45 counties in 1971. Low income families in 15 counties were also helped through Extension education.

County programs included studies of furniture and furniture restoration, refinishing and upholstery, interior decorating and lighting, house planning, household appliances, laundry products, pattern alteration, clothing construction, tailoring, lingerie, ecology, consumer buying, carpets, draperies, china and linens.

A half-hour Extension slide-tape program on causes and methods of solving pollution prob-

lems, prepared by Extension specialists in home furnishings, water resources and wildlife, was used extensively in 17 counties. An Extension package program on draperies drew favorable responses from surrounding states. A slide-tape series on major and portable appliances was so popular that eight states purchased the educational package. Three other states borrowed the series for their own home furnishings programs.

Clothing

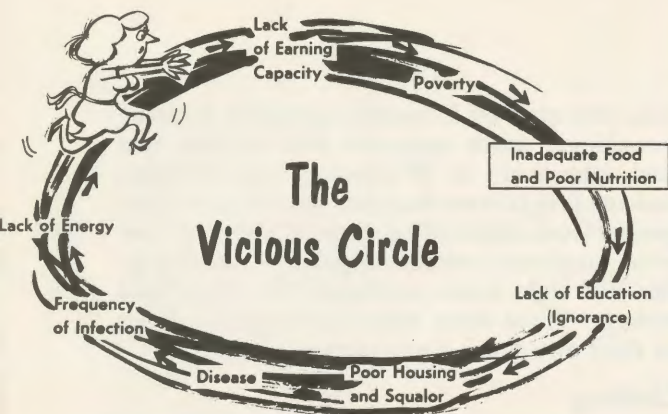
Approximately 12% of the family budget is spent for clothing. During inflationary times the homemaker is forced to hold expenditures to a minimum and home sewing is a good way to do it. In addition, sewing is an economical and satisfying means of self-expression.

Lingerie items represent a savings of up to 300%, while home-sewn tailored garments cost approximately half the price of ready-to-wear items.

The increased interest in home sewing has meant greater demands on county and state Extension personnel in clothing construction training. Extension clothing programs in 50 counties taught 2,354 persons to sew in 1971. Sixteen home economics agents were trained in new textile developments and 36 agents and project leaders were trained in pants fitting and altering.

Extension's "Happenings in Home Sewing," a series of three seminars in fabrics and techniques for home sewing, featured home economists from four major commercial companies. The public seminars were held in three S. D. cities.





Family Economics

Extension educational efforts in consumer buying and financial management reached over 12,000 rural and urban persons in 41 counties.

The audience included elderly citizens, participants of the Expanded Foods and Nutrition Program, Extension homemaker's clubs, 4-H members, home economics teachers, and individual homemakers who were not members of organized homemakers clubs.

Brokers, attorneys and credit experts provided information on estate planning, consumer rights and responsibilities, investing, court procedures, home financing and consumer credit.

Extension also used the state's educational television system to provide investment education, to reveal deceptive sales practices in South Dakota and to give advice on handling money during inflationary periods.

An Extension family economics specialist, who serves as secretary of the S. D. Consumer's League, was appointed by the governor's new Consumer Affairs Advisory Council and is legislative chairman for the S. D. Home Economics Association.

Family Life

Through group discussions in Extension family life programs, almost 21,000 homemakers (30% of whom were non-members) studied the impact of change on the family.

Extension Family Life Programs included:

Family living trends, communication, parenthood, coping with pressures and tensions, youth's future, drug problems, community improvement, acting in crises, physical and mental health, environment and family planning, volunteer work, discipline versus permissiveness, the adolescent and his family, retirement and needs of the elderly, family use of leisure time and changing needs throughout the family life cycle.

A program on Trends in Family Living trained 179 volunteer project leaders who subsequently taught 1,360 homemakers. Another lesson on parent-child relationships demonstrated that attitudinal change is almost impossible without good communication.

Foods and Nutrition

Extension homemakers' club members, participants in the Expanded Foods and Nutrition Program, Head Start cooks, health aides, other adults and youths continue to become aware of the vital link between nutrition and health because of the education provided by Extension food programs.

Over 900 project leaders taught 8,380 homemakers nutrition information in lessons on basic nutrition, food and health, economical food buying, using leftovers.

Over 1,200 persons learned about the overweight problem in South Dakota and the United States. Low calorie menus and weight control were studied at Extension homemakers' meetings, TOPS clubs and in high school classes.

One way to put more nourishing food on the table is by growing a garden. Extension horticulture and forestry specialists provided the know-how to help hundreds of South Dakotans make better selections of vegetable, fruit and flower varieties for local growing conditions.

An Extension fact sheet, entitled, "For Better Health—Home Grown Fruit and Vegetables," was prepared to show the relationship between nutrition and good gardening practices. An Extension circular, entitled, "Growing Vegetables in South Dakota," was produced to help Expanded Nutrition Program assistants and homemakers plan gardens, select and start crops, prepare and fertilize the soil, control pests and harvest the garden.

The Extension Service provided vegetable gardening training for home economists and Expanded Nutrition Program assistants working in Minnehaha, Meade, Pennington, Lawrence, Butte, Charles Mix, Beadle, Codington, Grant and Roberts Counties and the Standing Rock Indian Reservation.

Lessons on plant selection, cultural practices and pest control for vegetable gardens were provided Extension homemakers club leaders in Brule, Lyman, Gregory, Yankton, Douglas, Charles Mix and Aurora Counties. Similar lessons of flower gardening were given in Bon Homme, Kingsbury and Minnehaha Counties.

The S. D. Expanded Foods and Nutrition Program, initiated in a three-county pilot project Feb. 1969, is a federally-funded program, designed to help low income families improve eating habits and nutrition. The program now includes 68 paid full- or part-time program assistants or "field teachers" in 15 sites under the supervision of county home economics agents. In many instances their success has been phenomenal.

These "field teachers," who themselves were taken from the target audience and trained by Extension, provide families with information needed to solve food and nutrition problems. The program assistants in the Expanded Foods and Nutrition Program were trained in basic human needs, individual differences, personal standards and values, how to recognize and act on problems and how to improve family relations before entering the homes of their clients.

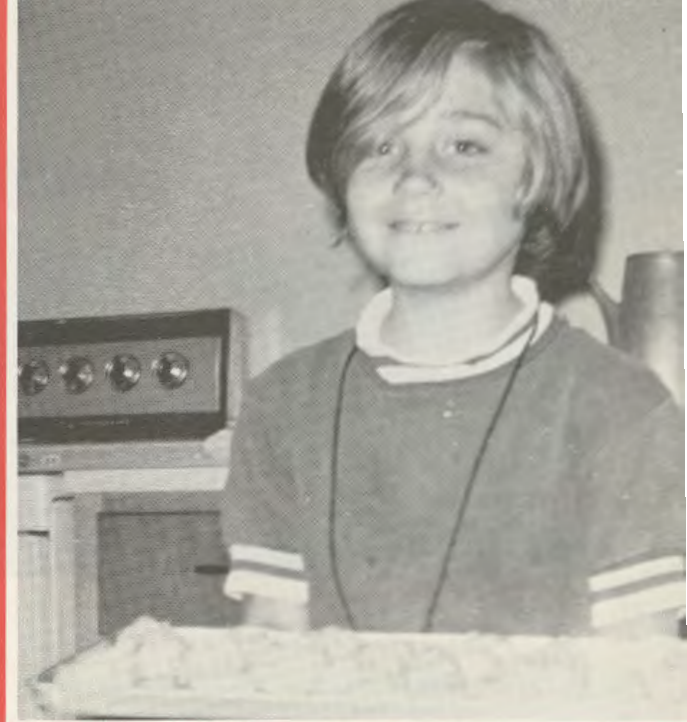
Although nutrition is the main concern of the Expanded Foods and Nutrition Program, SDSU Extension specialists also train program assistants in areas such as money management, human relationships, entomology, housing, clothing, gardening, health and safety.

The money management lessons even produced changes in the financial practices of the program assistants who were being trained to help others. The program assistants found themselves buying fewer items on time payment, giving their children allowances, keeping better records of spending and opening savings accounts for "that rainy day." Training others made them forget about personal problems and develop a compassion for others.

Program assistants were successful in helping others, too. In 1971 they worked with approximately 2,700 families—that's 11,572 persons, including 7,212 children.

Who did they help?

- A widow who pays \$50 rent and \$11.32 in telephone and electric bills from a meager monthly Social Security allowance of \$83.30.
- An emotionally disturbed, 21-year-old mother of two pre-school-age-children, who has only an eighth grade education, trying to "get by" on a monthly Aid-to-Dependent-Children check of \$243.
- A family of nine children. The father was laid off a \$425 a month job due to injury.
- A homemaker who cares for two retarded youngsters in addition to her own children in order to supplement her husband's \$368 monthly income. Four of her own children are retarded. One has a normal IQ.
- A homemaker who has learned how to plan and prepare family meals despite blindness.
- An elderly woman living in a low-income housing unit, who has learned through the Extension program that milk is as vital a food for her as it is for the young.
- A family who lives in a crowded, one-bedroom mobile home, but is happy about it. This is because it is a lot warmer than the run-down house they lived in that cost \$100 per month to heat in the winter.
- A teenage girl who has taken over the cooking, sewing and housekeeping for her family (the father and six brothers and sisters) after the death of her mother.
- A family that learned through the Extension educational efforts that they were eligible for food stamps and other assistance after the head of the house had been laid off work. Until the program assistant arrived they were living off venison and crackers.





Food surveys of homemakers, taken in 1970 before program assistants went to work and after they had worked with the families for seven months, indicated positively that the educational program works — homemakers became more aware of nutrition and were acquiring better eating habits.

During the month of June 1971 program assistants worked with 1,758 families, of which almost 1,100 were receiving U. S. Department of Agricultural assistance in the form of food stamps or commodities. The Extension program assistants are charged with helping families make the best of food that is available.

A large measure of the success achieved by the S. D. Extension Service and nutrition program assistants was due to cooperation from numerous community agencies, including city and county officials, food assistance program directors, government agencies, law enforcement agencies, food assistance program directors, doctors and nurses, grocers, bankers and the news media.

Expanded Foods and Nutrition Program 4-H-Like Expansion

Extension was called on to apply their success and expertise gained through the years in 4-H youth education to solve a growing national crises—poor diets. In a three-phase program to reverse the trend toward poor eating habits, 4-H teaching methods were applied under the supervision of Extension home economists in this new venture to reach almost 2,300 S. D. youths in 1971 with nutritional information and training in food and fun groups. One hundred and twenty-six volunteers were sent into the field in a 4-H like expansion program to teach good nutrition to youths from low income families and to introduce them to opportunities in 4-H.

One phase of the program involved paid adult program assistants working with low income youths.

Another phase provided training for teenage volunteers in foods and nutrition, simple crafts and personal development. This was done at a Food and Fun Camp. Sixteen volunteers from six counties were trained at 4-H Camp Lakodia in the summer of 1970. Upon conclusion of their training, they went out and involved 1,188 different youths in Food and Fun groups and other 4-H-like activities.

Another cadre of 67 volunteers (including seven boys—the remainder girls) received training in the summer of 1971. These were sent out to 15 counties to work with approximately 1,437 different youths.

Another phase was sending out teams of trained college girls to work with families and children in the homes on nutrition education. In 1970, almost 300 youths in three counties were reached by the college girls and in the following year they went into five counties and reached an additional 800 youths.

Housing Education on Rosebud Reservation

People placed in a new environment do not instinctively know how to make the best of their new predicament. The nation has been concerned about the original inhabitants of this country—the American Indian.

His average life span is only 44 years and infant mortality is three times the national average. His average yearly income is \$1,500, half of the national poverty level. Unemployment ranges from 40 to 70 per cent. Forty-two per cent of Indian school children drop out before finishing school, almost double the national average. The suicide rate among Indian teenagers is three times the national rate, and alcoholism is a problem.

In an effort to change this condition, the federal government provided funds in the 1960s to build more than 900 homes in one of the most impoverished areas of the nation—the Rosebud Indian Reservation. An occupancy housing education program on the Rosebud Indian Reservation grew out of discussions between the Rosebud Housing Authority and the S. D. Cooperative Extension Service.

The housing authority, charged with maintenance and operation of publicly-financed housing on the Rosebud Reservation, received a \$120,000 grant from the Department of Housing and Urban Development to establish a preventative maintenance and small home repairs program for public housing occupants. The program was established for occupants of 400 homes on the reservation and for families in other public housing.

Because the Extension Service experienced success using program assistants in the Expanded Foods and Nutrition Program, a similar approach was used on housing. Home management and home maintenance aides were trained and sent into the field under a 12-month contract between the Rosebud Housing Authority and the S. D. Extension Service.

Beginning in Nov. 1970, a field staff of 17, including 13 aides and four professionally trained persons, was organized. A notebook manual containing 19 low readability leaflets was distributed to home occupants. The leaflets provided information on maintenance and care inside and outside the home. Aides, visiting in 70% of the homes during the first eight months of the program, discussed each leaflet with the occupants. They were bombarded with requests for health and nutrition assistance. **One aide helped deliver a baby.**

Involved with outstanding success in the housing education program was the Neighborhood Youth Corps. **In a venture that some persons felt would never work on the Reservation, 50 community youths were trained in maintenance of public housing units, teenage misuse of drugs and narcotics, financial management and care and maintenance of lawns and trees.**

Some examples of their successes include:

Repaired fences and clotheslines, seeded lawns, repair of "Sioux 400" homes, appliance serial numbers in rental units recorded, homes of the elderly and disabled painted, and garbage stands planned and constructed.

An invalid Indian relates to the home management aides and the youths involved in the housing education program in these terms, *"I understand you help people."*

Ida Marie Norton, program director, who organized and supervised a staff of 17 (which during the summer of 1971 swelled to 67) was awarded one of four national Florence Hall Awards by the National Association of Extension Home Economists in 1971 for her work with the housing project.





4-H and youth

A new record of 29,018 boys and girls took part in 4-H work in South Dakota in 1971. This increase of almost 4,000 over last year was due to a greater offering of projects, an emphasis on leadership development and an increasing demand for 4-H work in towns and cities.

Over 20,000 members were in organized clubs, 7,068 boys and girls not in organized clubs were enrolled in special interest groups and more than 1,600, who were not full-time 4-H members, were involved in special TV projects. This still does not reflect the total impact of 4-H. An additional 6,200 boys and girls outside the 4-H program were provided other new learning experiences and almost 2,300 youths were in 4-H-like projects through the Expanded Foods and Nutrition Program.

South Dakota's more than 5,000 adult volunteer club leaders were assisted by 3,515 older 4-H youths who serve as junior and teen leaders.

This year, 48.3% of the S. D. 4-H members were from small towns and cities and 51.7% were from farms. Over 40% of the members are from families with annual incomes of less than \$3,000.

Leadership

Volunteer adult leaders, key to the success of 4-H and other Extension youth programs, do an even better job with proper training. Sixty-seven slide and cassette tapes were prepared by state 4-H agents and specialists to help leaders teach useful and practical subject matter in local clubs. Subjects covered included such topics as: Record book keeping, parliamentary procedure, demonstration help, how to judge beef, sheep, swine, arts and crafts, clothing, dogs, horticulture, electricity, foods and safe driving. Now, cassette, slide and tape libraries are being developed in county Extension offices for local leaders. The training series will be available from the state 4-H office until local libraries are completed.

Twenty-five counties now have from one to six cassette tape players and projectors for leader training. During the first four months of 1971 in Minnehaha County, slides and filmstrips on 4-H subjects were checked out more than 80 times. Many county agents are developing cassette tape and slide series of their own.

Four-H literature studies have shown that leaders use 4-H literature far more often than members. Because of this, 4-H reference material, member-leader planning outline guides and copies of the best how-to-do-it information guides in this state are being developed for and sent only to leaders, not members. Literature kits in clothing, foods and nutrition, photography and "Discovering 4-H," have all been developed for leaders. Members, of course, are sent simplified member-leader planning guides and, if they wish, they may

purchase the more complete leader materials. The more selective approach was initiated to reduce costs and to get the material where it was needed most.

A 4-H leaders' correspondence course of 10 lessons, available through county Extension offices until this year, was "face lifted." Last year, 227 leaders completed five or more lessons of the 10-lesson series. This year's revision of the correspondence course included dividing the program into three, five-lesson courses. The result has been tripled lesson participation. **This year, almost 700 leaders participated in the new and prospective leader training program.**

A new training outline also was developed to assist new agents in learning how to conduct 4-H programs in their counties. A 4-H staff member administers the program and follows up with quarterly sessions with the new agent and his training agent.

Other 4-H leadership activities included:

- A new and prospective leader training program for 679 new leaders.
- A bus load of 4-H leaders and friends attended the 4-H Leaders' Forum at the National 4-H Center, Washington, D. C.
- Reorganization of the 4-H Leaders' Association in South Dakota produced new faces and ideas that promise to revitalize the organization.
- Six hundred 4-H leaders and parents attending leaders' institutes were challenged to try to understand the actions and attitudes of today's youths.
- Leaders' institutes, held throughout the state.

The State 4-H Conference, held in June for 14- to 19-year-old 4-H members, annually provides youths an opportunity to develop statewide community service projects around areas of concern to them. This year, it was environment, penal institutions and the population explosion. What's accomplished this year will be reported during the next state conference.

Recruitment

Several counties circulated an interest-finding questionnaire in schools and followed up with educational meetings in order to get more boys and girls out for 4-H. This approach helped boost enrollment in Spink County by 150 members. Campbell County, which carried out a 12-month recruitment project, not only increased enrollment, it recruited new leaders and generated increased interest in county 4-H events and projects. Parents in Kadoka were sold on the value of a sound 4-H educational program and organized three clubs. Extension agents and leaders in Minnehaha County organized 21 new clubs in five months.

Using volunteer leaders to organize new clubs and train youth has helped extend the agent's time and provides leaders and youth with valuable leadership experiences.

Says one leader, *"This contact helps me grow and realize the other side of Extension programs."*

Another comments, *"Helping a new club on its way has shown me how much we have developed in my own club."*

Projects

New projects and approaches are being used to help club advisors capture the attention of prospective 4-H members.

The 4-H Bicycle Safety Project, which has trained 5,351 youths, has received such overwhelming response that some elementary school principals want the project every year in their schools. This year the counties of Beadle, Clay, Grant, Day, Brown, Gregory, Sully, Shannon, Bennett, Brookings, Clark, Codington, Haakon, Hand, Lake, Mellette and Roberts conducted bicycle training in their schools.

The State 4-H Advisory Board approved a new 4-H project to help 9- to 12-year-old boys and girls first enrolling in 4-H to explore what America's largest youth organization has to offer without committing the newcomer to a single project. "Discovering 4-H," which was offered for the first time in the fall

of 1970, includes a whole spectrum of projects that may be of interest to the first-year member, including: Arts and crafts, clothing for both boys and girls, electricity, crops and horticulture, conservation, food and you, entomology, home improvement, child development, photography, rocks and minerals, live animals, safety and health.

Once the members have explored the projects which interest them, they are free to enroll in the project of their choice.

TV projects were another means of attracting the attention of boys and girls. The TV 4-H Science Club and the TV Photo Fun Club were televised over the state's public television network. Of the 2,657 boys and girls enrolled in the TV projects, 1,608 were not otherwise involved in 4-H.

Projects dealing with ecological and sociological problems also have interested youths. Increased enrollment was noted in projects involving environment, community service and human relations. More than 1,700 boys and girls participated in drug seminars, while 760 young people participated in special environment control workshops. Other topics of special appeal included: Mental health, medical self-help, venereal disease, cancer and service to the handicapped.

Events

Camping is one of the favorite activities for the younger 4-H members in South Dakota. The 4-H camping program, designed to be of interest to boys and girls in the 9-13 age range, teaches youngsters to understand and appreciate nature. Special interest classes at camp include: Ecology, conservation, tree and plant identification and na-

ture hikes. The camp program is balanced with crafts, swimming, ceremonies and a large variety of recreational and music activities.

Many low income children never have a chance to get out of their home environment. The Youth Development Camp was started in 1969 to provide disadvantaged youths an opportunity to attend camp. About 90 young persons attended. Besides a regular camping program of recreation and nature—nutrition and health are emphasized through lessons, films and food preparation. A grant by the Readers' Digest Foundation in 1971 assures program expansion.

Perhaps the best picture of the Youth Development Camp, attended by 200 boys and girls, was summed up by a home economics college student from Union County working at the camp: *"These kids discovered talents they didn't know they had!"*

4-H Foundation

The 4-H Foundation Inc., which was founded in 1963 to secure and invest private funds which will supplement the public investment in the 4-H program, has experienced relatively slow growth. The foundation was in need of contributions far beyond its present capabilities to accomplish goals wanted in this state.

A fund raising program, which offers hope for attaining these 4-H program goals, has been initiated through the cooperation of the S. D. Stockgrowers Association to raise \$500,000 through a series of calf sales during the next five years. Its success will depend on the backing of individual livestock owners, business men, civic organizations, livestock and agricultural organizations and many, many other friends of 4-H.



editorial and visual aids

Information office personnel provided communications support for about 40 events and programs sponsored by the Cooperative Extension Service and the College of Agriculture at SDSU this year.

Extension is indebted to newspapers, magazines, radio and TV for this umbrella of information support. The mass media educational learning programs were backed up with specially prepared fact sheets, circulars, bulletins, newsletters and audio-visual packages.

The Expanded Foods and Nutrition Program, consumer education, pollution, wind erosion, moisture conservation, other environmental problems, livestock diseases, insect and plant disease problems received much attention.

South Dakota was declared hog cholera free and all counties were cleared of bovine brucellosis during the period. News and radio stories from SDSU made important contributions to both accomplishments.

Features

Several feature stories were developed relating to the use of "tree banks" and other possible ways of dealing with the upcoming problem of Dutch elm disease. Taxes and community development were other features. The human and practical side of rural life also was presented in the form of personality features on Eminent

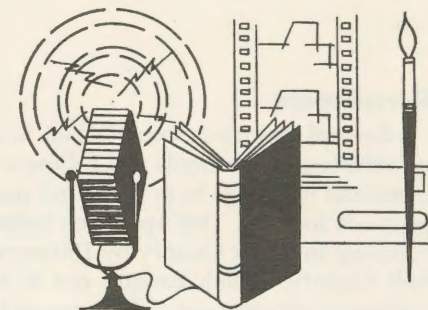
Farmers and Homemakers, incoming and outgoing Farm Youth Exchangees and Master Pork and Feeder Pig Producers. "Legitimizing" features about real-life people were presented to encourage others to follow their examples in such practices as terracing, wildlife habitat development, wildlife feeding and set-aside acres.

Extension communications provided a series of six in-depth features on potential pollution problems of agriculture, livestock run-off, legislation and pending state regulations.

Innovation

A slide-tape cassette "package program," which was initiated a year ago by a home economics home furnishing specialist, was probably the most innovative information effort. Over 60 new slide-tape programs were made. About a third of the more than 200 slide-tape sets in the SDSU agricultural information library are now narrated on tape by specialists.

Addition of cassette-tapes as a tool in Extension education has created a demand that's been hard for the information staff to keep up with. Thirty-seven tape-slide programs have been requested by agents in their counties for use 274 times. Between the slide library and the individual "package program" series, about 4,000 original slides were taken, more than 28,500 slides were duplicated and over 1,000 cassette-tapes were produced. Seventy-five new cassette tape playback units were acquired for loan to agents and specialists, bringing the total number now available for loan to over 120. These supplement purchases made by individual counties.



Information Via Radio and TV

Extension radio and TV efforts include over 11,000 radio programs featuring Extension specialists, Experiment Station staff members and other resource people. Most of these were carried on 26 S. D. radio stations.

Between 80 and 90% of the people in the state had opportunities to hear Extension horticulture and forestry specialists in a series of two-minute "Yard and Garden" programs, initiated in May. Ninety shows, representing 1,650 individual broadcasts and 54 hours of air time were recorded for summer broadcast. All of the larger cities in the state had one or more stations carrying the series.

The Agricultural Information Office and the University News Bureau used an Extension initiated broadcast news service in 1971 on a test basis. The service was designed to provide timely audio news releases via a telephone feed system to radio and TV stations. Thirty-four feeds were made during the trial period; however, the service was not used by stations enough to justify the expense, so it was discontinued.

Extension used the public television network in South Dakota for a series of three different programs plus an "Extension Weekly Program" and a livestock outlook program. "Extension Weekly" is a half-hour program series, appearing each week. Special programs with organized

audience groups covered S. D. tax problems, swine management and 4-H leader training. **Five programs were aired on the tax issue with people on both sides of the rather thorny tax subject appearing on the programs.** While there were some fears raised by people before the series began, persons on both sides of the controversy commented after viewing the program on the fairness of the approach and on the completeness of the information.

The five-part series on "Extension Weekly," covering swine production, was a "first" in that the series was the result of requests from the S. D. Pork Council. This organization arranged swine producers meetings on the broadcast nights in order to encourage discussion on topics aired.

A film on weed control, finished in 1970, received a top rating in the American Association of Agricultural College Editors' sponsored film contest. About 100 copies of the film have been purchased by colleges, university personnel and commercial companies throughout the United States.

Public service television announcements, promoting the use of slow moving vehicle emblems, were produced in cooperation with the S. D. Highway Patrol. The announcement spots have been used on all commercial stations in the state.

Publications

Specialists in information also assisted in the production of 113 new publications, helped revise 34 publications and reprinted 93. Thirty-eight new fact sheets were produced and over 177,000 copies were distributed. Twenty-seven new 4-H publications were introduced and over 195,000 distributed.

Out-of-the-ordinary publications include: A colorful series on "Discovering 4-H," designed to attract young, new 4-H members; six fact sheets on feeding wheat to livestock; "Profiles in Progress," an annual report for Extension; and an an-

nual report on "Continuing Adult Education from SDSU," portraying other off- and on-campus learning experiences.

New information was prepared for the Expanded Foods and Nutrition Program, which is aimed at lower income segments of the population. **One of the most important pieces of literature was a "Home User's Manual," designed originally for supporting the housing educational programs in the Rosebud Indian Reservation located in south central South Dakota.** Fifteen separate sections have been completed and each sheet of the manual provides helpful information designed to help teach families basic home and household equipment maintenance. The sheets are used as the basis for a lesson in home maintenance among families in homes administered by the Rosebud Housing Authority. They can be added to the manual for later reference. Several information sheets have been used in other subject matter areas.

Visual Aids

Still another important aspect of information support to the staff occurs through the production of visual aids needed in exhibits, displays and at events. Displays for the S. D. State Fair, the annual S. D. Crop Show and 4-H camps were created, refurbished or redesigned by Extension Communications. **An important project this year has been erection of large road signs for various SDSU Experiment Station facilities, located throughout the state.** Fifteen of the signs, 4 by 6 feet, have been completed and 10 are in various stages of production.

Other Editorial and Visual Aid Support

A full-time home economics editor was reinstated as an Extension Communications staff position on Jan. 1, 1971, to provide information support for the Expanded Foods and Nutrition Program and to assist in the preparation of 4-H material.

Extension editorial specialists also provided public relations support during the employment and training of Expanded Foods and Nutrition Program assistants; wrote stories on the work of these assistants and outlined the youth segments of the program to South Dakota audiences.

One feature story dealt with an assistant working with visually impaired homemakers in the Watertown area. Extension communications also authored a promotional bulletin to explain to service clubs the purpose of the Expanded Foods and Nutrition Program.

At least half of the home economics stories prepared are consumer oriented—designed to help homemakers decide how to get the most from the dollars they spend on consumer goods.

In addition, Extension communications prepared over 850 stories for mass media use. About 400 stories were prepared strictly for county Extension personnel, who use them in local news columns and radio and TV programs.

Completing the Extension communications work, county agents and Extension home economists mailed 544,000 letters, initiated 20,000 radio programs, 30,000 TV programs and almost 21,000 news articles. They answered questions for nearly 292,000 office callers during the year; more than 9,500 persons attended field trails and demonstrations workshops and meetings and over 356,000 persons were counted at achievement days, crop shows, farm and home shows, rally days, camps etc.

Through radio, TV and newspaper items, circular letters, judging schools and other means, Extension estimates that this year it completed nearly 1.2 million education contacts.

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